WINDCREST®

Learn DOS®— Guaranteed!

Richard P. Cadway

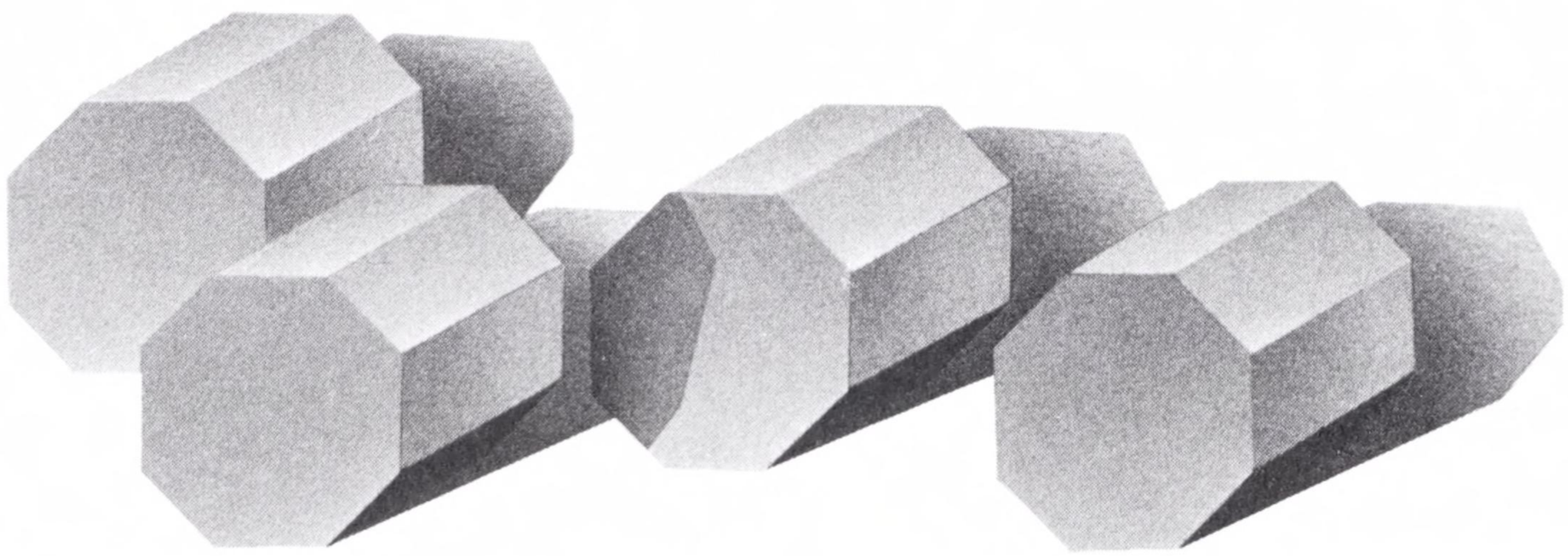
- Explore all versions of MS/PC-DOS
- Run your applications
- Master basic skills with proven quick-start tips

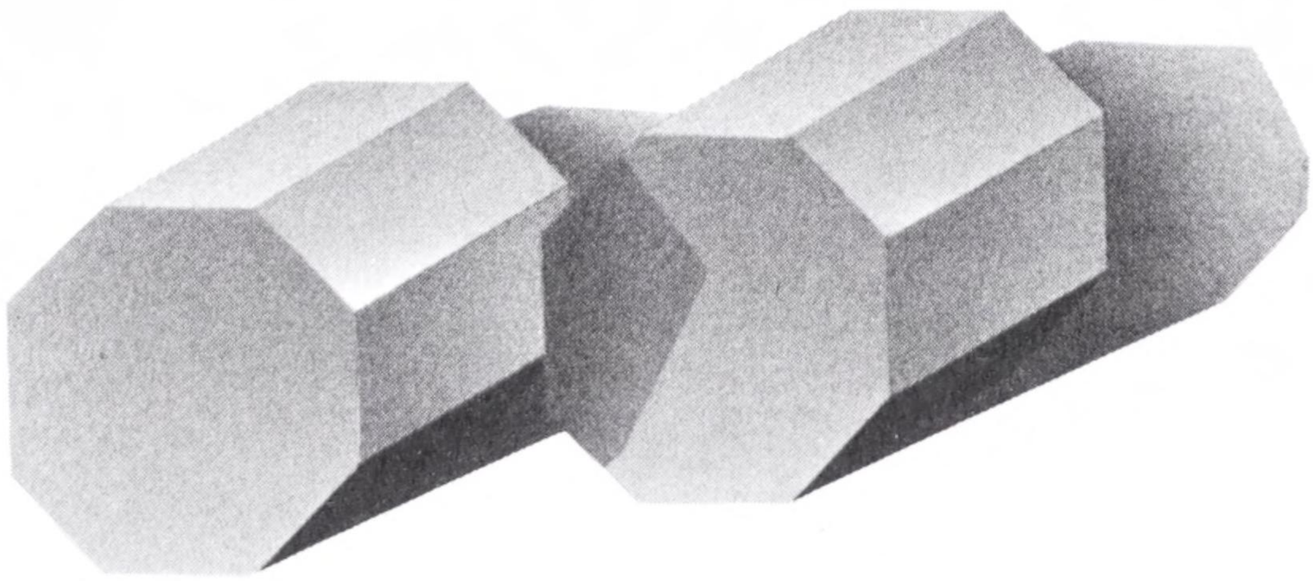
Vermont
Department of Libraries
Northeast Regional Library
RD 2 Box 244
St. Johnsbury, VT 05819

Learn DOS– Guaranteed!

Learn DOS—Guaranteed!

Richard P. Cadway





WINDCREST®

Windcrest books are published by Windcrest Books, an imprint of TAB BOOKS. The name "Windcrest" is a registered trademark of TAB BOOKS.

Published by **Windcrest Books**
FIRST EDITION/FIRST PRINTING

© 1990 by **Richard P. Cadway**. Reproduction or publication of the content in any manner, without express permission of the publisher, is prohibited. The publisher takes no responsibility for the use of any of the materials or methods described in this book, or for the products thereof. Printed in the United States of America.

Library of Congress Cataloging-in-Publication Data

Cadway, Richard P.
Learn DOS—guaranteed! / by Richard P. Cadway.
p. cm.
ISBN 0-8306-3331-6
1. PC DOS (Computer operating system) 2. MS-DOS (Computer operating system) I. Title.
QA76.76.O63C33 1990
005.4'46—dc20 89-48723
CIP

TAB BOOKS offers software for sale. For information and a catalog, please contact TAB Software Department, Blue Ridge Summit, PA 17294-0850.

Questions regarding the content of this book should be addressed to:

Windcrest Books
Imprint of TAB BOOKS
Blue Ridge Summit, PA 17294-0850

Acquisitions Editor: Stephen Moore
Technical Editor: Sandra L. Johnson
Book Design: Jaclyn J. Boone

Notices

Autocad®	Auto Desk, Inc.
Award™	Award Software, Inc.
AMI™	American Megatrends, Inc.
Hercules Graphics Card™	Hercules Computer Technology
Lotus and 1-2-3™	Lotus Development Corp.
Logitech™	Logitech, Inc.
Microsoft® **MS Word®** **MS-DOS®** **Windows®** **Paintbrush®** **GW-BASIC®**	Microsoft Corp.
Norton Utilities™	Peter Norton Computing
Novell®	Novell, Inc.
Mewsmaster®	Kyocera Unison, Inc.
Phoenix®	Phoenix Computer Products
dBASE III®	Ashton-Tate
Ventura Publisher®	Ventura Software, Inc.
IBM® **XT®** **AT®** **IBM-DOS®** **PC-DOS®** **PS/2®**	International Business Machine Corp.
Wordperfect®	WordPerfect Corp.
WordStar®	MicroPro International Corp.

Contents at a glance

PART 1 Hardware
1 The basic computer system 3
2 Disk drives and diskettes 9
3 The keyboard and mouse 15
4 The clock and calendar 21
5 Parallel and serial ports 25
6 Connecting the printer 31
7 Basic operation 35

PART 2 DOS Training
8 List of terms 41
9 Load DOS 51
10 Changing disk drives 59
11 The DIR command 63
12 The PROMPT command 67
13 Make a file with COPY CON 71
14 The TYPE command 77
15 The DELETE command 83
16 Make Directories 87
17 Change Directories 97
18 Remove Directories 105
19 COPY a file 109
20 The PATH command 117
21 FORMAT a diskette 123
22 DISKCOPY 129
23 How to BACKUP 135
24 How to RESTORE 141

PART 3 OPERATIONS
25 The AUTOEXEC.BAT file 149
26 The CONFIG.SYS file 155
27 How to load software 159

Index 168

Contents

Preface *xiii*
Acknowledgments *xv*
About the Author *xvii*

Introduction **xix**
Who should read this book *xix*
What makes this book special *xix*
Information *xx*
Requirements *xx*

PART 1 HARDWARE

1 The basic computer system 3
Computer system requirements *3*
Power supply *4*
Floppy drive *4*
Hard drive *4*
Memory chips *5*
Slots *5*
Driver card *5*
BIOS chips *5*
Running SETUP *5*

2 Disk drives and diskettes 9
What you should already know *9*
Disk drive operation *9*
The hard drive *10*
The floppy disk drive *11*
Floppy diskettes *11*
The 5¼ inch double and high-density diskettes *12*
The 3½ inch double-sided and high-density diskettes *12*
The 5¼ inch diskette insertion *12*
The 3⅓ inch diskette insertion *12*

3 The keyboard and mouse 15
What you should already know *15*
The 84-key keyboard *15*
The 101-key keyboard *16*
Electrical compatibility *17*
Keyboard tips *17*
The mouse *18*
Is a serial mouse better than a bus mouse? *18*

4 The clock and calendar 21
Why have a clock and calendar *21*
What you should already know *21*
Entering the TIME and DATE *21*
The clock in the XT compatible *21*

5 Parallel and serial ports 25
What parallel and serial ports are *25*
What you should already know *26*
Port identification *26*
The video adapter *27*
Parallel and serial data transfer *27*
When to use a parallel port *27*
When to use a serial (RS-232) port *28*
Identifying the first of two parallel ports *29*
Serial vs. parallel *29*

6 Connecting the printer 31
What you should already know *31*
The parallel interface *31*
Parallel cable to printer connection *32*
Parallel cable to computer connection *32*

The serial interface *32*
The printer's serial interface *33*
The computer's serial port *33*
Types of printers *33*

7 Basic operation 35
What happens when you turn on the computer *35*
What happens during DOS operation *36*
Processing data *36*
Data flow through the computer *36*
Compatibility *36*
Compatibility of IBM compatible computers *37*
Avoiding compatibility problems *37*

PART 2 DOS TRAINING

8 List of terms 41

9 Load DOS 51
Why you load DOS *51*
What you should already know *51*
Existing hard drive conditions *52*
Is your hard disk formatted? *52*
DOS formatting the hard disk *52*
Format the hard drive with the DOS system *56*
Checking for the DOS directory *56*
Making the \DOS directory *56*
Copying DOS files into the \DOS directory *56*

10 Changing disk drives 59
Why you change drives *59*
What you should already know *59*
Changing drives *59*
Extra practice *59*

11 The DIR command 63
Why use DIR *63*
What you should already know *63*
Displaying the current directory in the prompt *64*
Using the DIR command *64*
Using switches *65*

12 The PROMPT command 67
What it does *67*
What you should already know *67*
Using the PROMPT command *68*

13 Making a file with COPY CON 71
What a file is *71*
What you should already know *72*
Making ASCII text files *73*

14 The TYPE command 77
Why TYPE a file *77*
What you should already know *78*
Using the TYPE command *78*

15 The DELETE command 83
What you should already know *83*
Using the DEL command *84*

16 Make directories 87
What a directory is *87*
What you should already know *91*
Making directories *92*

17 Change directories 97
Why change directories *97*
What you should already know *97*
Changing directories *98*
More practice *104*

18 Remove directories 105
Why remove a directory *105*
What you should already know *105*
Make and remove directories *106*
Make and remove subdirectories *107*

19 COPY a file 109
Why copy a file? *109*
What you should already know *109*
How to COPY files *110*
Copying a file from diskette to diskette *114*

20 The PATH command 117
What you should already know *117*
How the PATH command works *117*
Avoiding PATH command problems *119*
A story to explain the PATH command *121*

21 FORMAT a diskette 123
Why format diskettes *123*
What you should already know *123*
Getting your system ready *124*
Formatting diskettes *124*
FORMAT a 360K diskette *124*
FORMAT a 1.2Mb diskette *125*
Other FORMAT command statements *126*
Making a diskette bootable *126*
Bad sectors when formatting *127*

22 DISKCOPY 129
Why DISKCOPY *129*
What you should already know *129*
Drives and diskettes *130*
DISKCOPY exercises *131*

23 How to BACKUP 135
Why BACKUP the hard drive *135*
What you should already know *135*
How to BACKUP your hard drive *136*
The situation *137*
Things you should know *137*
BACKUP update *138*
The situation *138*
Things you should know *138*
What is next *139*

24 How to RESTORE 141
Why and when to RESTORE *141*
What you should already know *141*
RESTORE drive A: to drive C: *142*
The situation *142*
Restoring just one directory and all its files *143*
The situation *143*
Restoring just one file *144*
The situation *144*

PART 3 OPERATIONS

25 The AUTOEXEC.BAT file 149

Why have an AUTOEXEC.BAT file *149*
What you should already know *150*
Making the AUTOEXEC.BAT file *150*
How the AUTOEXEC.BAT file operates *151*
Making another AUTOEXEC.BAT file *152*
An AUTOEXEC.BAT file to run WordPerfect *153*

26 The CONFIG.SYS file 155

What a CONFIG.SYS file is *155*
What you should already know *155*
Making a CONFIG.SYS file *156*
The meaning of CONFIG.SYS file commands *157*
Examples of other statements *157*
Other CONFIG.SYS files *157*

27 How to load software 159

What you should already know *159*
Software with instructions *159*
If you don't have instructions *160*
Software installation files *160*
Compiled install programs *161*
An installation example *161*
Another installation example *161*
Configuration *162*
Loaded software program does not run *163*
What's next *163*

Appendix Other DOS Commands 165

Index 168

Preface

THE PURPOSE of this book is to give every computer user some basic knowledge about DOS (*Disk Operating System*) and to provide an alternative to complex and confusing DOS books.

Knowing the basics of DOS will enable you to make better use of your software application programs, as well as better use of your time. Many of you will be skipping those just okay TV programs and spending long hours at your computer enjoying a tool that has become commonplace today.

It gives me great pleasure to know that I might enhance your life by helping you build the foundation for your future computer expertise. I strongly believe in having a mentor. Everyone needs someone who is experienced and knowledgeable to guide him or her when entering a new field. I wrote this book to be your DOS mentor; may it lead you to success in the computer field.

Acknowledgments

MANY OF YOU might not find this part of the book particularly interesting. On the other hand, those of you who see your names here will probably like this part of the book the best.

The first person I would like to thank is William Klobuchar. He said to me one day, "Rick, you are really sharp working with computers. You should go into business because people need someone like you when they buy computers." Then he said, "I want to get a modem. How much are you going to charge me?" Bill has been getting his computer equipment wholesale ever since. Did I miss something?

I must thank the many people that have purchased computer systems from me. The questions they have asked made me realize that a great need for this book existed.

The largest contribution to this work was made by Lawren Dowling, M.Ed., who edited my writing and drew many of the illustrations in this book. She also gave me encouragement and support.

The photographs were taken by Richard Johnson. He used his special camera with 4×5 negatives. His skill and great patience enabled me to give you high-quality photos to enhance your learning without straining your eyes.

I would like to thank Ed Galicki for making the CAD drawings using a plotter and professional CAD programs.

Thanks also need to go to Stephen Moore (acquisitions editor for Windcrest Books) for his generous help with a new author (me). Also, I thank the people at Windcrest for the opportunity to share this book with the public (and hopefully make a little money).

About the author

RICHARD CADWAY's involvement with computer systems began in 1980 when he purchased an Atari 800 Computer System. He then mastered the BASIC programming language and progressed into numerical control programming. (Numerical control programs direct the movement of cutters in machine tools such as lathes and milling machines.) Using a terminal and modem, he then wrote programs in California on an IBM 360 mainframe computer located in Pennsylvania. He continued N/C programming using a Texas Instruments Professional Computer System, which is very similar to the IBM PC computer.

Cadway has been a consultant since 1986, and he has built and sold computer systems to people in all walks of life including engineers, housewives, retirees, teachers, professionals, and other individuals, as well as businesses. He has also installed Local Area Networks (*LAN*s) using Novell software and ArcNet hardware.

While helping people understand and use his computer systems, he has found that the majority of his customers do not want to learn the complete DOS operating system. They want to learn DOS commands that are necessary when using their computer software such as WordPerfect, Microsoft Word, WordStar, Lotus 1-2-3, dBASE, and Ventura Publisher.

Introduction

THIS BOOK WILL introduce you to the basic DOS commands that most people need to use their computers and run their software. The commands covered here will allow you to master the essential DOS commands that give you the ability to use powerful applications such as WordPerfect, WordStar, Lotus 1-2-3, and dBASE.

Who should read this book

Anyone who doesn't already have a basic working knowledge of DOS should read this book. If you have just bought your first computer, you will probably need to learn the basics of DOS. If you are using a computer at work, but need to be able to copy files, make directories, backup the hard disk, and load software, you will also need to learn DOS. Regardless of the reason, you need to understand DOS before you can use your computer effectively.

What makes this book special

I have designed this book to teach you DOS in the fastest and easiest way possible. This book gives you only the necessary DOS material you need to operate your computer. This approach was designed to save you the time and drudgery that is often characteristic of other DOS books.

Each chapter (lesson) begins with a definition, continues with a list of things you should already know, gives the DOS command, and then provides interesting practice. When an important topic is touched upon, you will find a page number

directly after it so you can conveniently review that topic before going on. You will also notice a constant review of previous material as you progress through the book.

Occasionally you will see icons or symbols in the margin. Two kinds of icons are used in this book. The icon of a hand with a string tied around a finger indicates something you should remember. The other icon is a pair of eyes looking at the text. This indicates something to watch out for.

Information

Can you learn a foreign language like French by reading a French/English dictionary? Possibly, but it would be tough. DOS is similar to a foreign language, and to some people, more foreign than French. It's smart to start with the basics and use repetition to remember the material. From there, you can go on to more advanced aspects of the language.

If you have never seen a computer before, start with the hardware section to understand how the different parts of the computer operate. If you have used a computer before, I recommend that you skim through the hardware section for a quick review. You'll find the DOS Training section divided by commands to make it easier to learn each command and later to find the command you want to review. The Operations part shows you how to make the AUTOEXEC.BAT and CONFIG.SYS files and provides basics about loading software onto your hard drive.

Requirements

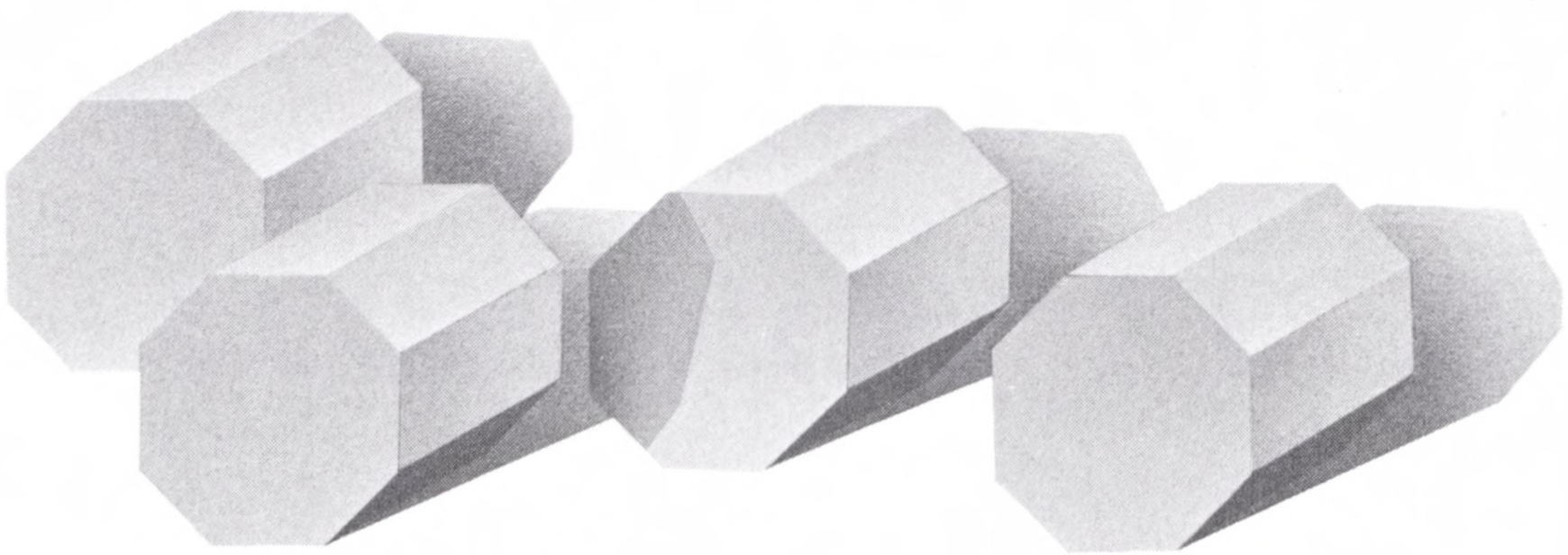
Because most computers these days are sold with a hard disk drive, I am going to assume that you have an IBM or IBM-compatible computer with one or two floppy drives and a hard disk drive of the letter designation C. I am using DOS version 3.2. Most versions of DOS will be compatible with this book. If you have DOS 4.0 or 4.01, you will be able to use this book, although some of the messages will be slightly different. If you have an earlier version of DOS such as 1.0, 1.1, 2.0, or 2.1, I suggest you upgrade to at least DOS 3.1. If you purchased your computer system by mail order, your hard drive probably needs to be partitioned and formatted, so I have included a chapter on partitioning and formatting. If you purchased your system from a local dealer, your hard drive probably has been partitioned, formatted, and contains a \DOS directory.

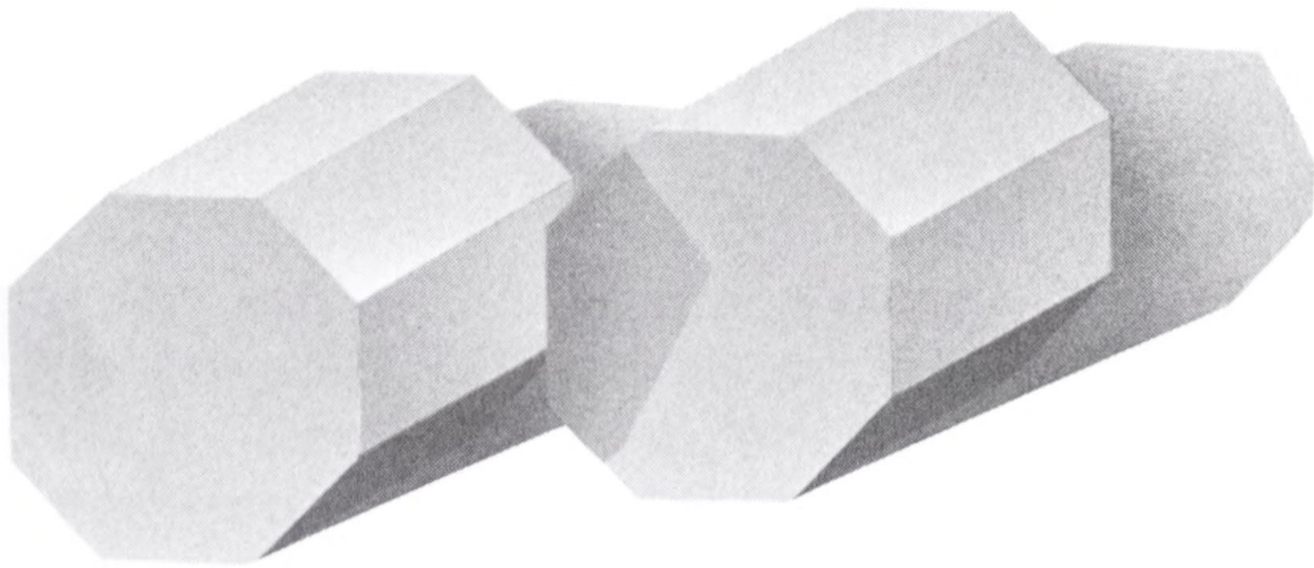
It is important to follow the book from beginning to end because each chapter builds upon the previous chapter. I've omitted all the unnecessary details and included only what is necessary for you to learn DOS in the simplest and easiest way.

I guarantee you will learn from this book or your money back.

Part 1

Hardware





CHAPTER 1

The basic computer system

THERE ARE MANY different brands of computer systems on the market. Like cars, some are engineered better than others. I have found that the popular computer magazines give accurate evaluations of most computer products, and they can help prepare you for making a smart purchase.

Computer system requirements

At the present time, most computer systems being sold have the following minimum equipment: a 20 megabyte hard drive, 1 floppy drive, and 512K RAM memory.

I would recommend a system with a minimum of 640K RAM and a 60 megabyte hard drive. At this time, 640K RAM is the maximum base memory and is required to run some programs like Ventura Publisher. The reason I recommend a 60 megabyte hard drive is because many of the newer programs are requiring more and more disk storage space. If you get a hard drive that is too small, you will need to transfer your software from the hard drive to floppy diskettes and back again. This process can be very inconvenient and time consuming.

In Fig. 1-1, you will see the major parts of the typical IBM-compatible computer. The following descriptions are based upon the most readily available parts.

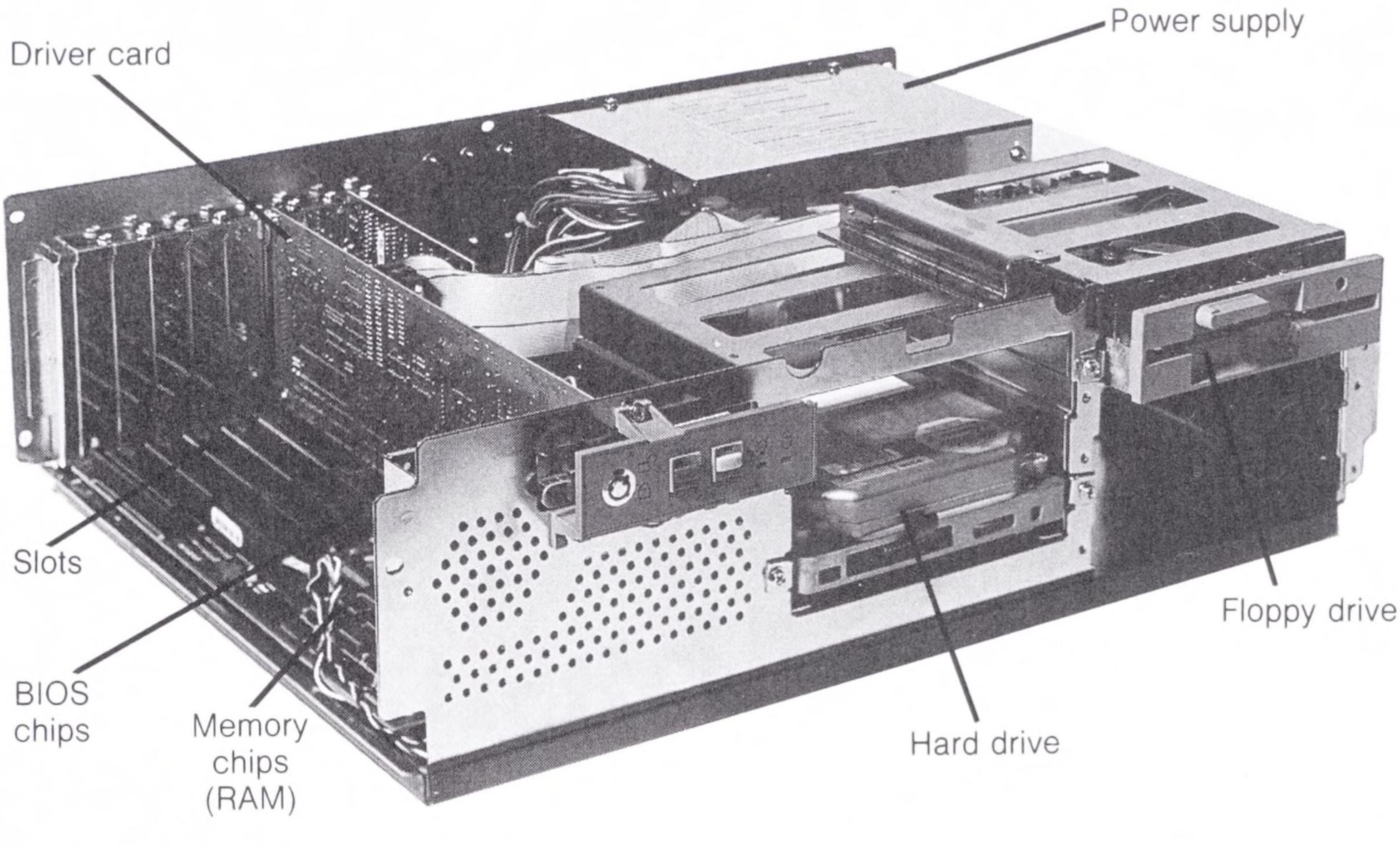


Fig. 1-1 The internal components of a typical computer.

Power supply

The power supply has a dual input voltage switch that can select either 110 or 220 volts. This switch is usually covered with a piece of tape so that you can't accidentally change the setting. There are six power connectors. Two of these connectors have six pins which plug into the main computer board with the black wires facing each other. The other four connectors are interchangeable and are used to power the floppy and hard drives.

Floppy drive

The floppy drive reads and copies data to a *floppy diskette* (or disk). If your computer has a hard drive, the main purpose of the floppy drive is to add or remove data from your hard drive. If you don't have a hard drive, the floppy drive is then used to run programs.

Hard drive

The hard drive, because of its large capacity, can store many programs. It is about 10 times as fast as a floppy drive when reading and writing data. Also, there is no need to change disks as you do when using a floppy drive.

Memory chips

The memory chips make up the *Random Access Memory* (abbreviated *RAM*). The RAM is the work space used when running a program. There are 36 sockets which when filled with 256K chips will give one megabyte of RAM. Filling 18 sockets with 256K chips, and the remaining 18 sockets with 64K chips, will give you 640K RAM. Memory chips are rated in *nanoseconds* (abbreviated ns) by the speed at which they can operate. A 100 ns chip is faster than a 120 ns chip. The faster the better, but the higher the cost.

Slots

The slots are used to expand the system by adding cards, to perform a desired function, like the driver card shown in Fig. 1-1. Connectors on the main computer board line up with openings in the back of the case. The combination of an opening and a connector is considered to be a *slot*.

Driver card

The driver card is used to transfer data using the floppy and hard drives. This card can control two floppy drives and two hard drives. An easy way to rate these cards is by the *interleave*. A 1:1 interleave ratio gives the fastest data transfer rate. A 2:1 interleave is slower than the 1:1 when transferring data, and the 3:1 is even slower.

BIOS chips

The BIOS chips are read-only memory chips and direct **B**asic **I**nput and **O**utput for the **S**ystem. Some of the best-known brands are Award, Phoenix, and AMI.

Running SETUP

In the IBM AT compatible computer, the CMOS setup will be accomplished either by a program in the BIOS (Basic Input Output System) chips or by using a diskette that contains a CMOS SETUP program. Besides being able to change the time and date, the CMOS SETUP enables you to tell the computer what equipment it has. This might sound strange, but when the computer begins its booting up process, it looks at the setup information and proceeds to check its memory, drives, interrupts, etc., to be sure everything is operating properly. Below is an example of a typical CMOS SETUP in BIOS. It is invoked by holding down the *Alt* and *Ctrl* keys and hitting the *Escape* key. Some CMOS SETUPS can be accessed by hitting the above-mentioned keys at any time, and some CMOS SETUPS can only be accessed during bootup time. There are many different ways to begin the SETUP programs in the BIOS because there are many different brands of BIOS. I suggest that you look at your computer operation booklet to find the method your computer uses to access the CMOS SETUP program.

The CMOS SETUP information is held in a CMOS memory chip (p. 48). This

chip requires a constant source of electricity to maintain this information. That is why all AT compatible computer boards have a nicad battery with a charging circuit or an external battery pack. Your computer could loose SETUP information if the battery fails or if your power supply sends out a voltage spike. If your computer looses SETUP, your system will not be harmed nor will you lose data from your hard drive, but your system will not operate until the CMOS SETUP information is restored.

The following is a typical CMOS setup:

DATE	01/05/89
TIM E	14:14:00
DISKETTE 1 (A)	1.2
DISKETTE 2 (B)	NONE
FIXED DISK 1 (C)	3
FIXED DISK 2 (D)	NONE
VIDEO TYPE	EGA
BASE MEMORY SIZE	640
EXTENDED MEMORY SIZE	0
SPEED SELECTION	HIGH SPEED

Save Current Options [Y/N]?

Let's go through the CMOS SETUP screen to understand what each entry is for:

DATE—Sets the date in the calendar.

TIME—Sets the time in the clock.

DISKETTE 1 (A)—Is drive A:, and is usually a high-density floppy drive, but can be a 360K, 720K, or 1.44 Mb floppy drive.

DISKETTE 2 (B)—Is drive B:, and is usually a 360K or 720K floppy drive, but can be a 1.2 Mb or 1.44 Mb floppy drive.

DISK 1 (C)—If you have one hard drive, this is it. It is very important to know the type (number) for your drive. The number you use tells the computer the number of cylinders, number of heads, number of sectors per track, and other necessary information. Be sure you have the correct drive type (number).

DISK 2 (D)—If you have two hard drives, this is the second drive. Again, be sure you know the correct drive type.

VIDEO TYPE—Informs the system whether you have a color or monochrome video adapter (card). There is usually a jumper (p. 48) on the main computer board which also needs to be set. Consult your manual.

BASE MEMORY—This will be either 512K or 640K.

EXTENDED MEMORY—This will be 0 if your system has 640K RAM. If you have one megabyte RAM, it should be 384. Modify this entry in relation to the amount of memory you add. Your computer main board will have jumpers or switches to configure the memory, so consult your manual if you add memory.

SPEED SELECT—Automatically selects slow or fast CPU (p. 47) speed upon system start up.

Save Current Options [Y/N]?—Pressing the Y key will save the information and begin booting. Pressing the N key will restore previous information and begin booting.

CHAPTER 2

Disk drives and diskettes

THE DISK DRIVES in your computer system are used to store and transfer data. The two major types of drives are the hard drive and the floppy drive.

What you should already know

- The CMOS SETUP is stored in a memory chip that needs a constant source of electricity which is supplied by a battery (p. 5).
- The AT and 386 compatible computer knows what equipment it has by checking the CMOS SETUP data.
- Slots are used to expand the computer system (p. 5).
- RAM is made up of memory chips on the main computer board (p. 5).
- RAM is the computer's work space (p. 5).

Disk drive operation

A tape recorder changes sounds to magnetic pulses and records them on a tape. Likewise, the floppy and hard disk drives change letters into magnetic pulses and record them on a disk. To retrieve data, disk drives read the magnetic pulses from

the disks and convert them back to characters like the tape recorder reads the magnetic pulses from the tape and converts them back to sounds.

The hard drive

The *hard drive* (also called the *hard disk* or the *fixed disk*) is a mass storage device that allows you to store many programs and files for quick access. The hard drive saves and retrieves data at least 10 times faster than a floppy drive. The most common hard drives range from 20 to 80 megabytes in capacity although 150 to 330 megabyte hard drives are becoming more common. The term *fixed disk* comes from the fact that the disks in the hard drive are not removable like a floppy disk, but fixed in a permanent location. The term *hard disk* comes from the fact that the disk in the hard drive is rigid and cannot be flexed like the floppy disk.

Hard drives are available in *full* and *half height*. An advantage of the half height drive is that it only uses half the space used by a full height drive. A disadvantage is that it usually has less capacity than the full height drive. The hard drive in Fig. 2-1 has three hard disks. Although only one magnetic head is shown, there is one on each side of all hard disks for a total of six heads. The stepping motor is used to position the magnetic heads on the hard disks to read or write data. Another motor on the underside, which can't be seen in Fig. 2-1, spins the hard disks at a constant speed and makes the noise you hear when your system is running.

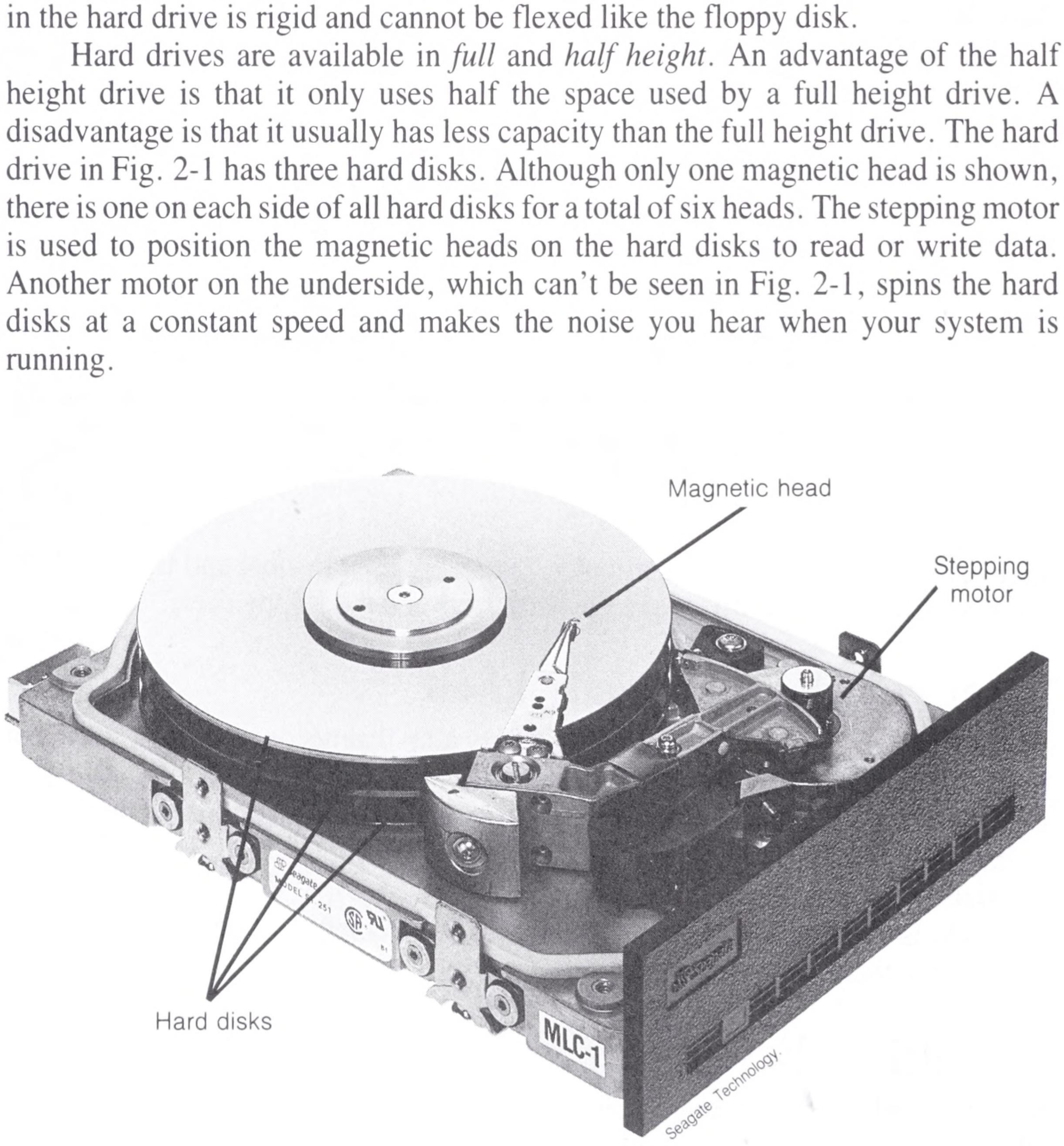


Fig. 2-1 A single height hard drive with its cover removed.

The floppy disk drive

The *floppy drive* is mainly used to put programs on or take programs off the hard drive, although it can be used to run programs. There are four major categories of floppy drives:

- 5¼″ 360K capacity
- 5¼″ 1.2 megabyte capacity (high density)
- 3½″ 720K capacity
- 3½″ 1.44 megabyte capacity (high density)

The new PS/2 line of IBM computers use 3½ inch floppy drives exclusively. Most IBM compatible computers come with a 5¼ inch floppy drive and offer the 3½ inch floppy drive as an option.

Floppy diskettes

Floppy diskettes, which are used in floppy drives, are inexpensive and easy to transport. They are ideal for moving and copying programs from one computer to another.

Figure 2-2 shows the two most common types of floppy diskettes. Small size and a shield that protects the internal disk are the main advantages of the 3½ inch diskettes. The major advantage of the 5¼ inch diskette is its lower cost.

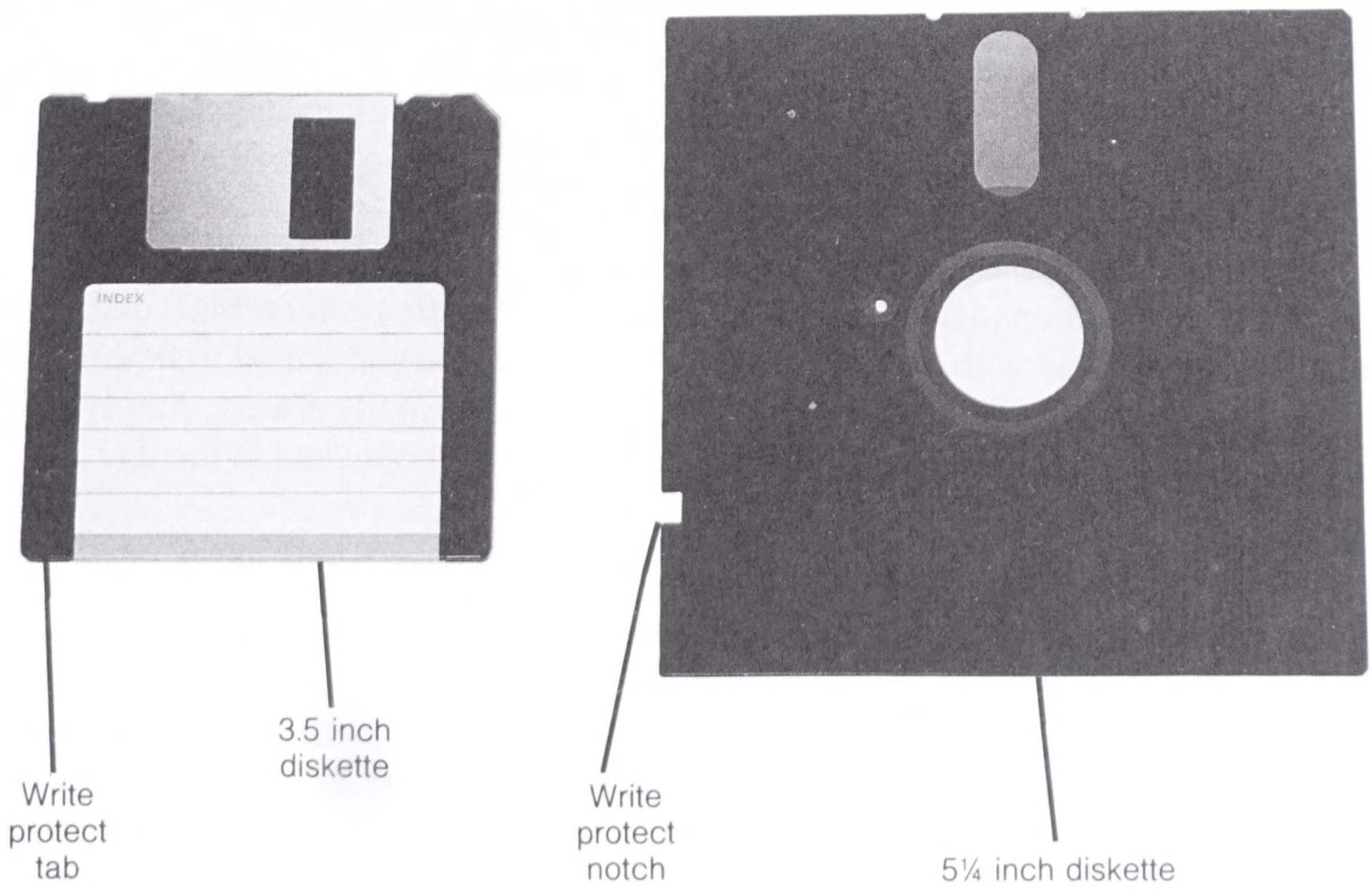


Fig. 2-2 A 3½ inch and a 5¼ inch diskette.

The 5¼ inch double- and high-density diskettes

The two major types of 5¼ inch floppy diskettes are the 360K (double-sided double density) and the 1.2MB high density.

The 360K DSDD diskettes can hold 362,496 bytes of data. You will find that most software you buy will come on 360K diskettes; the reason being that they can be read by either an XT compatible (usually has only 360K drives) or an AT compatible (usually has a 1.2MB drive).

The 5¼ inch 1.2MB high-density diskettes look identical to the 360K DSDD diskettes, but are quite different. IBM developed the high-density floppy drive and high-density diskettes for their IBM-AT computers because a faster and easier method was needed for backing up their larger capacity AT computer hard drives. High-density diskettes are rotated faster than 360K diskettes and the data spots that are written to the disk are closer requiring the use of a higher grade magnetic coating. A high-density diskette can hold 1,213,952 bytes of data which is approximately 3.3 times that of the 360K diskette.

Therefore, if it takes 20 high-density disks to backup a hard drive, then it would take 66 360K DSDD diskettes. Hooray for high-density diskettes!

The 3½ inch double-sided and high-density diskettes

The 3½ inch 720K double-sided double-density (DSDD) diskettes can hold 730,112 bytes of data. The 3½ inch 1.44Mb high-density diskette can hold 1,449,984 bytes of data.

The 5¼ inch diskette insertion

In Fig. 2-3, the 5¼ inch diskette is inserted into the drive with the notch on the left side. The lever must be in the up position as shown. When the diskette is all the way in, pivot the lever in a clockwise motion to a downward position.

If the notch in the left side of the diskette is covered, the computer will not write any information (data) to the disk. This is called *write-protect*. Most diskettes on the market come with a sheet of adhesive paper rectangles called *write-protect tabs*. To ensure that the data on the diskette is not accidentally erased, simply fold a tab over the notch. Remove the tab when you want to copy data to the disk.

The 3½ inch diskette insertion

Make sure the label is up and the write-protect tab is on the left side when you insert the 3½ inch diskette into the 3½ inch floppy drive. The 3½ inch diskette has a built-in plastic write-protect tab that slides back and forth in either an open position or a closed position. When the tab is in the open position, no data can be written to or erased from the diskette. The closed position (opening is covered) is for normal read and write operation.

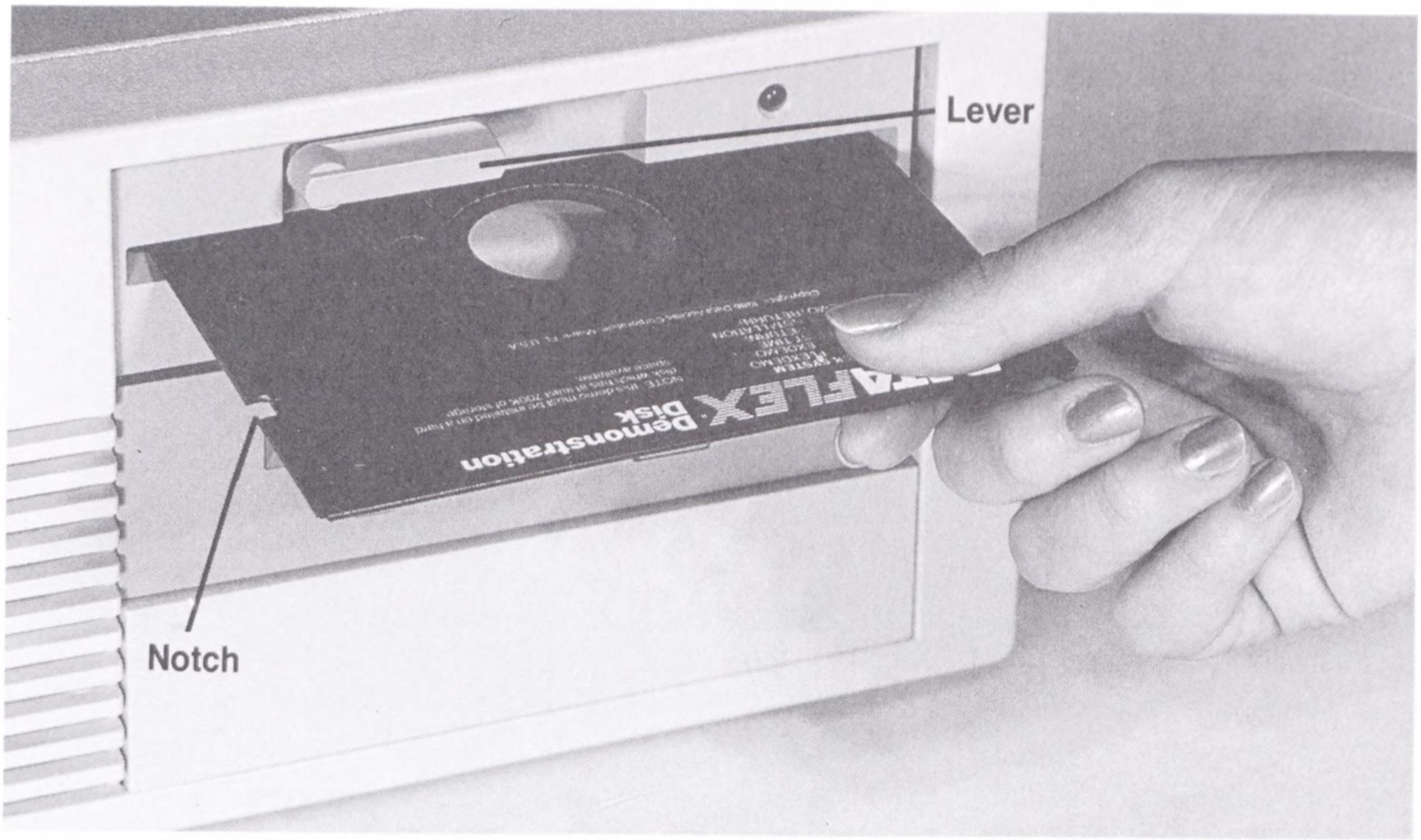


Fig. 2-3 Proper insertion of a 5¼ inch diskette.

CHAPTER 3

The keyboard and mouse

THE TWO most common types of keyboards are the *84 key* (standard AT) and the *101 key* (enhanced). All software programs require the use of an input device like the keyboard or mouse.

What you should already know

- The cursor is the blinking light on the monitor screen that indicates where the next character will appear (p. 45).
- Slots enable computer expansion by accepting cards (p. 5).
- 5¼ inch diskettes are either DSDD or high density (p. 11).
- 3½ inch diskettes are smaller and have a protective shield (p. 11).

The 84-key keyboard

Figure 3-1 shows the 84-key keyboard and the location of frequently used keys. The Alt and Ctrl keys are used in conjunction with other keys. For example, if you hold down the Ctrl key and strike the letter C key, you will send a break signal to the computer (p. 9). If you hold down both the Ctrl and Alt keys and strike the Delete

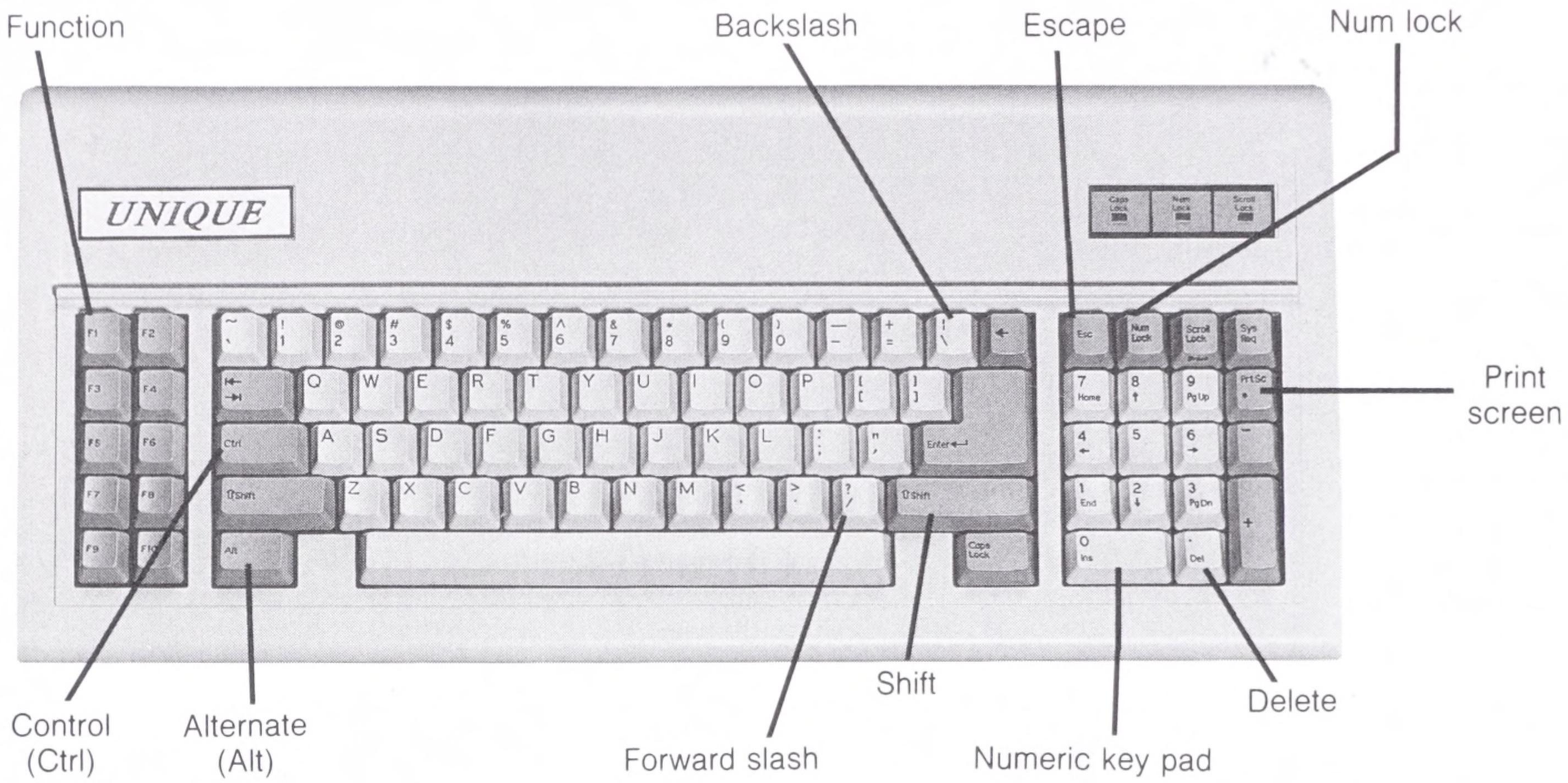


Fig. 3-1 A typical 84-key keyboard.

key you will tell the computer to do a warm boot (p. 42). Holding down the Shift key and striking the PrtSc (Print Screen) key will cause every thing showing on the monitor screen to be copied to the printer (don't do this unless your printer is on-line).

I personally find the 84-key keyboard easier to use with programs like WordPerfect because of the proximity of the function keys to the Alt and Ctrl keys. You can use one hand to easily pick any combination of these keys. A disadvantage of the 84-key keyboard is the necessity to push the Num Lock key each time you switch from using numbers on the numeric keypad to using the arrow keys.

The 101-key keyboard

The 101-key keyboard in Fig. 3-2 shows the location of frequently used keys as well as the cursor key pad which the 84-key keyboard does not have. The greatest advantage of the 101-key keyboard over the 84-key keyboard is its ability to enter numbers and use the arrow keys without the need to press the Num Lock key. For this reason, if you are going to use a spreadsheet program like Lotus 1-2-3, I recommend the 101 keyboard. The 101 keyboard also has 12 function keys compared to 10 on the 84-key keyboard. Some of the newer software packages are assigning operations to the new function keys F11 and F12.

Most keyboards for compatible computers use a five-pin DIN connector, like the one in Fig. 3-3, for connecting the keyboard to the computer. The key helps you align the plug for correct insertion into the socket. The plug is usually located in a round or oval hole in the back of the computer.

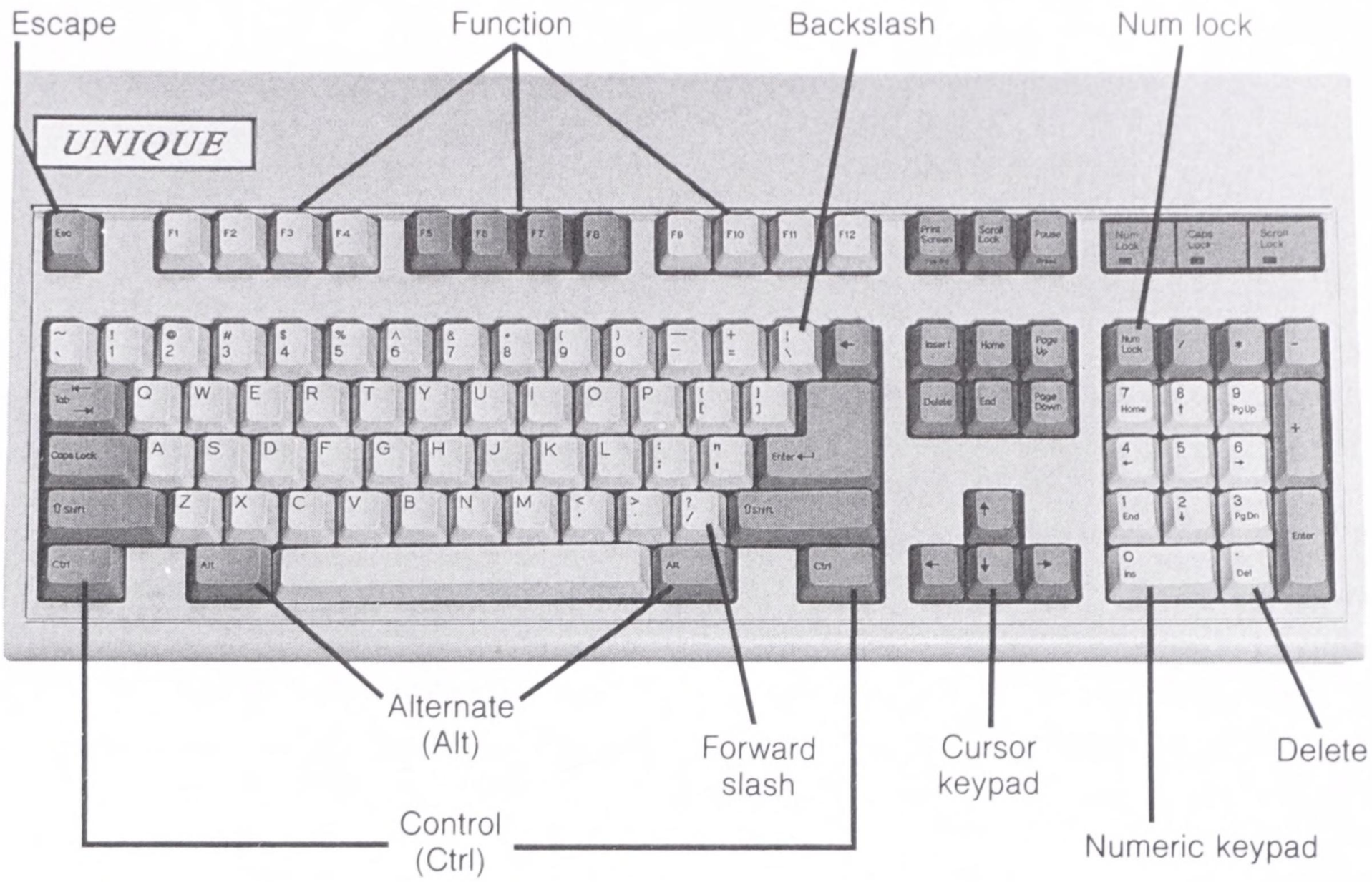


Fig. 3-2 A typical 101-key keyboard (enhanced).

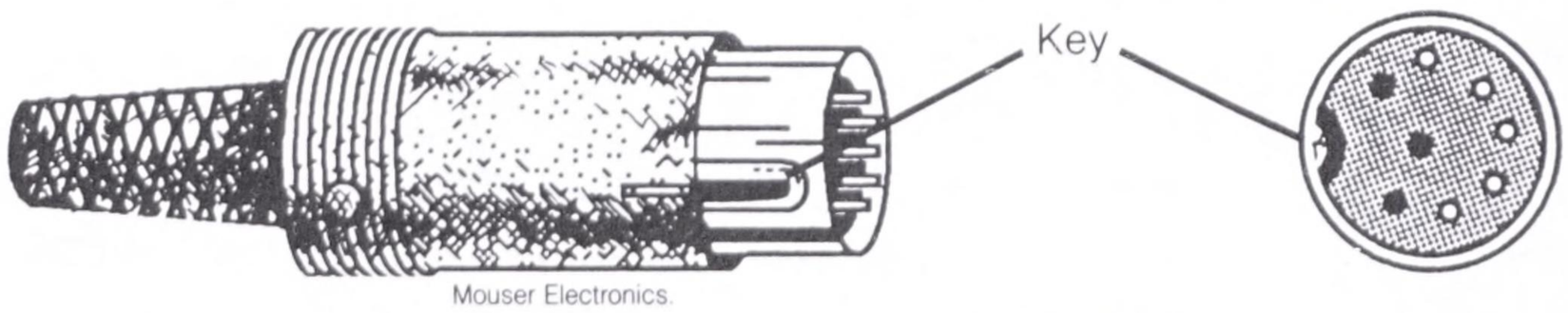


Fig. 3-3 A 5-pin DIN connector used to connect the keyboard to the computer.

Electrical compatibility

There is an electrical, not a visible, difference between the keyboards used on XT and AT type computers. Some keyboards have switches on the bottom that need to be set to XT or AT in order to work. Some keyboards can automatically sense which type of computer they are connected to and automatically switch to that type of computer. Then others are strictly for an XT or AT and are not interchangeable. You can't hurt the computer by using the wrong keyboard, but you will get an error message, and the computer will not operate.

Keyboard tips

It's important to have a high-quality keyboard because you will be using it so much. Some cheap keyboards have keys that get loose and spongy after a short time, and

others have keys that get stiff and tend to stick. If you haven't already got one, insist on a keyboard of high quality.

The mouse

The mouse is an input device that moves the cursor (usually an arrow) on the screen in the same direction that you move the mouse. A ball on the underside of the mouse rolls with mouse movement and gives the computer the data it needs to move the cursor. The buttons on the mouse are used to select something on the monitor screen that you point at with the cursor.

Some mice have two buttons, and some have three buttons like the one in Fig. 3-4. Some software programs will utilize all three buttons, and some utilize only two buttons. The mouse in Fig. 3-4 is a serial mouse and has a 9-pin D connector attached to its cable. Also in Fig. 3-4 is a 9- to 25-pin converter which enables you to use a 25-pin serial port on your computer. The bus mouse works like the serial mouse except that it has a round connector instead of the 9-pin D connector and plugs into its own driver card that you insert into one of the slots in your computer.

Is a serial mouse better than a bus mouse?

Your computer can only have a maximum of two external serial ports and eight slots. Selecting a serial or bus mouse depends on what equipment you have now, and what you plan to do with the system in the future. Let's look at a couple examples.

Example 1. Your system has four open slots and one serial port available. You plan on buying a printer with a serial interface. You already have an internal modem, and don't plan to use any more slots. Because the price of the serial and bus mice is about the same, I would pick the bus mouse. Having four open slots with no plans to use them and the need to purchase a second serial port rules out the serial mouse.

Example 2. Your system has two open slots and two serial ports, and you plan to buy a printer with a parallel interface (the most common interface). You also have another computer in your office with a serial port. I would pick a serial mouse over the bus mouse in this situation. First of all, the system only has two open slots and when the slots are full, there is no more room for expansion. Second, you have two serial ports, and you are not using them. And third, the serial mouse is easy to connect to another computer; simply plug it into the serial port and load the software mouse driver. Attaching the bus mouse to another computer requires removing both computer covers, and moving the driver card from one computer to the other. You would also need to replace the covers and load the software mouse drivers.

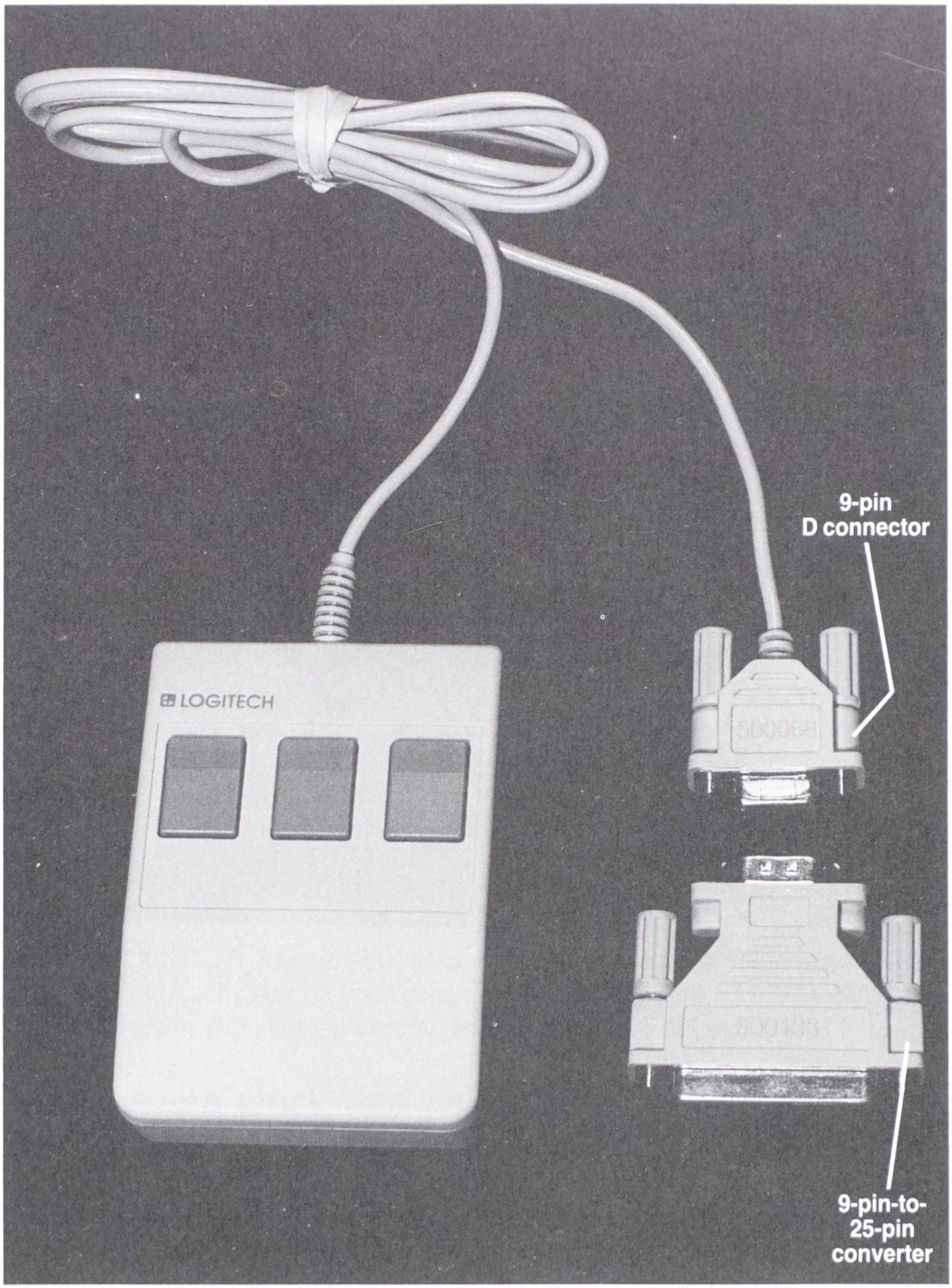


Fig. 3-4 A 3-button serial mouse and a 9-to-25-pin adaptor.

CHAPTER 4

The clock and calendar

THE TIME AND DATE are important factors in our personal and business activities and also to the activities of your computer system. Having a built-in clock and calendar frees us from having to remember to enter the TIME and DATE.

Why have a clock and calendar

DOS records the TIME and DATE with each file that is created and uses this information when you execute the BACKUP and RESTORE commands. Some programs use the clock and calendar to record when data entries were made and sort data records chronologically. Other programs use the clock and calendar to allow access to computer networks only on predetermined days and times. And still others use the clock and calendar to put the DATE and TIME on invoices and other documents automatically.

Programs like Lotus 1-2-3 allow you to TIME and DATE stamp your spreadsheets using special commands that read your computer's clock and calendar. And don't forget, your computer can also be used as a $1500 desk clock.

What you should already know

- Type the letters shown in **boldface** type:
- The symbol <enter> means to hit the Enter or Return key.
- Booting the computer is turning on the computer (p. 42).
- The blinking light on the monitor is called the cursor (p. 45).
- You can buy a serial mouse or a bus mouse (p. 18).
- The basic keyboards are the 84 key (AT type) and the 101 key (enhanced) (p. 16).

The command: DATE (will show current date and ask for change)

The command: TIME (will show current time and ask for change)

Entering the time and date

If you don't have an AUTOEXEC.BAT file in the \ROOT directory of drive C:, DOS will always ask you to enter the TIME and DATE.

First, boot your computer. Insert your DOS system diskette in drive A: and turn on the computer. You will be asked to enter the new date:

```
Current DATE is Tue 1-01-1980
Enter new DATE (mm-dd-yy): 02-04-1989 <enter>
```

If the current date above is incorrect, you can enter the new date in the format shown and hit the Enter key. If the current date shown is correct, just hit the Enter key to keep it.

You are now asked to enter the new time:

```
Current TIME is 0:03:31.24
Enter new TIME: 13:08:00 <enter>
```

If the current time is incorrect, you can enter the new time in 24-hour format and hit the Enter key. If the current time is correct, just hit the Enter key to keep it.

Now you see the copyright, DOS version number, and the prompt:

```
Microsoft(R)  MS-DOS(R) Version 3.21
(C)Copyright Microsoft Corp. 1981–1987

A>
```

Note: If you type in a new date, the date you typed will be loaded into computer memory and used until you turn off the system, unless you are using DOS 3.3 or later on an AT type computer. I haven't seen an AT compatible that hasn't had a clock and calendar built into the main computer board.

The clock in the XT compatible

If you have an XT compatible, you might not have a clock and calendar at all. The clock and calendar usually comes on a card with the floppy controller, game,

parallel, and serial ports and is called a multi I/O (Input/Output) card. In some computers, the clock and calendar might be on a card all by itself. Normally the card containing the clock and calendar comes with the necessary software to set the clock. For example, I use the multi I/O card and install a program called TIMER.COM in a directory called \TIMER. Then I use the AUTOEXEC.BAT file to call the TIMER.COM program located in the \TIMER directory to copy the correct TIME and DATE into the computer memory. To set the TIME and DATE, follow the instructions provided with your clock and calendar card.

CHAPTER 5

Parallel and serial ports

PARALLEL and serial ports allow the exchange of data between the computer and external devices. Some of the external devices which can be connected to these ports are the printer, mouse, external modem, networking cables, and data acquisition equipment. The terms parallel interface and serial interface are used when describing the type of connection available on an external device.

What parallel and serial ports are

A *port* is a gateway. The port allows the passage of data in the form of electrical pulses to and/or from an external device. The parallel port in the computer is simply a long D-shaped object with 25 holes containing electrical contacts and is called a *female D connector*. The serial port in the computer is like the parallel port except it has 25 pins instead of holes and is called a *male D connector*. There is also a 9-pin serial port which performs the same function, but has the advantage of being smaller than the 25-pin serial port. Another name for serial port is COM port. Serial port one is COM1 and serial port two is COM2. COM is an abbreviation for communication.

What you should already know

- ☑ The keyboard has a 5-pin DIN connector to connect it to the computer (p. 17).
- ☑ Slots are used for expansion by adding cards (p. 5).
- ☑ Most XT type computers use a card in a slot to add a clock and calendar to the computer system (p. 22).
- ☑ AT type computers have the clock and calendar built into the main computer board (p. 22).
- ☑ Parallel and serial ports are located on the back of the computer.
- ☑ Parallel and serial interfaces are used to connect external devices to parallel and serial ports on the computer.

Port identification

Looking at Fig. 5-1, you can see that the serial, parallel, and monitor ports are all elongated D-shaped connectors. The D-shape allows the mating connector only one way of insertion. The gender of the connector helps prevent you from plugging the device into the wrong type of port. If you look back at Fig. 3-4, you will see that the 9-pin D connector of the mouse can plug into the 9-pin serial port that is shown in

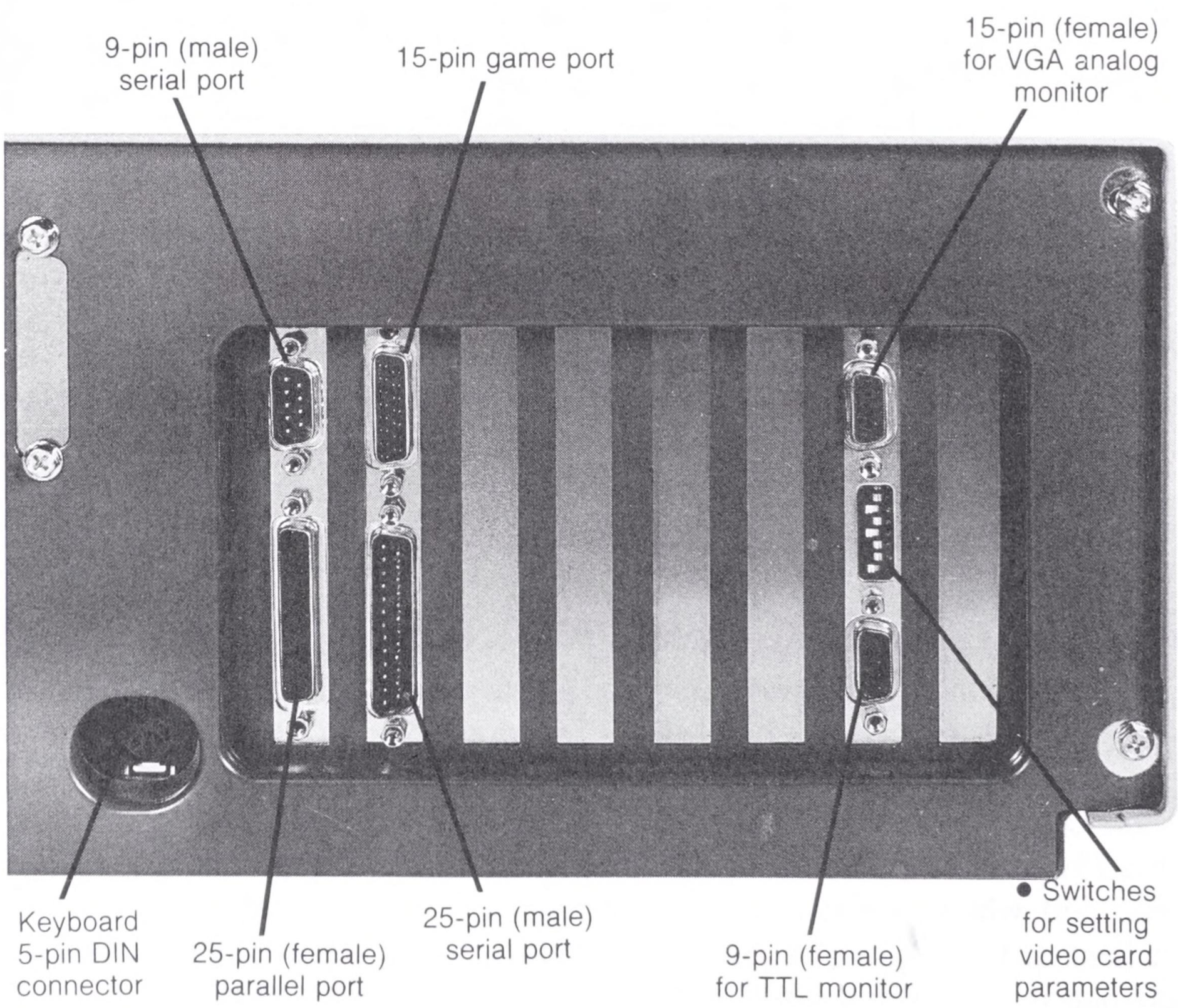

9-pin (male) serial port
15-pin game port
15-pin (female) for VGA analog monitor
Keyboard 5-pin DIN connector
25-pin (female) parallel port
25-pin (male) serial port
9-pin (female) for TTL monitor
• Switches for setting video card parameters

Fig. 5-1 The back panel of a computer showing its various ports.

Fig. 5-1, and the 9- to 25-pin adapter, shown in Fig. 3-4, can be used to plug the mouse into the 25-pin serial port shown in Fig. 5-1. The 15-pin game port shown in Fig. 5-1 is used when connecting a joystick controller to the computer and is used mainly for playing video games. The parallel port is the 25-pin female D connector shown in Fig. 5-1, and because it is the only parallel port on this computer, it would be the primary port LPT1. DOS allows the use of up to three parallel ports in one computer and are referred to as LPT1, LPT2, and LPT3.

The video adapter

The computer in Fig. 5-1 is equipped with a VGA adapter which has a 15-pin female D connector and a 9-pin female D connector. The 15-pin female connector will only accept a VGA analog monitor cable or a multisync type monitor with a special adapter cable. VGA means *Video Graphics Array* and is IBM's newest color graphics standard. The 9-pin female connector will accept TTL monitors and the switches are to select which TTL monitor will be connected. TTL monitors are typically monochrome, RGB, and EGA type monitors and require digital input.

Usually, on the monochrome video card, the connector above or below the monitor 9-pin connector is the primary parallel port or LPT1, and any other parallel ports would be LPT2 and LPT3. DOS will recognize up to three parallel ports in one computer. Plug the appropriate connector of the printer cable into LPT1 (primary).

Parallel and serial data transfer

The parallel port moves data along parallel lines which are the wires in the printer cable. Imagine a freeway with eight lanes going in each direction. It's rush hour and the cars are bumper to bumper (not hard to visualize, is it?), and there is a toll booth on each lane. Eight cars pull into the eight toll booths and when signaled, all eight cars are allowed to pass through at the same time. Each time the toll booths are signaled another eight cars pass through. In the computer world, each group of eight cars would represent a *byte* and would be equal to one character. This is how the parallel port sends characters to the parallel printer.

The serial port moves data in a straight line. Imagine a road with one lane in each direction. Again, the cars are bumper to bumper. There is one toll booth on the east-bound lane, and the toll booth worker counts eight cars and then rubber stamps the word "stop" on the ninth car. Then he counts another eight cars and stamps the word "stop" on the ninth car and continues this process until there are no more cars. A computer would consider each group of eight cars to be one *byte* (character) and the cars with the word stop stamped on them would be called *stop bits* and would be used to separate the bytes.

When to use a parallel port

Most printers come with a parallel interface, which means you connect them to the parallel port on the computer with a parallel printer cable. Some expensive

programs will not operate unless a device, called a *key*, is plugged into the parallel port. You would also use a parallel port for a plotter with a parallel interface, although only a very small number of plotters have a parallel interface. Use the parallel port to communicate with a laser printer. Most laser printers have both a serial and a parallel interface, but are connected in parallel because it is easier.

When to use a serial (RS-232) port

Some printers come with a serial interface, and many offer a serial interface option. Use the serial interface when greater communication control is necessary or when communicating in both directions. Most plotters require a serial port connection. Use a serial port for the serial mouse and the external modem. Some inexpensive networks use the serial ports to connect one computer to another one so they can communicate back and forth. Digitizer tablets use a serial port for input to the computer in a manner similar to that of the mouse.

The serial cable shown on the left in Fig. 5-2 is a 25-pin female to a 25-pin male. The serial cable shown on the right in Fig. 5-2 is a 9-pin female to a 25-pin male. Which cable you use is determined by the type of serial port connectors you have available on your computer. Some serial devices require specially jumpered cables to operate correctly. These devices will come with instructions about altering the cable, but should not be tackled by the novice.

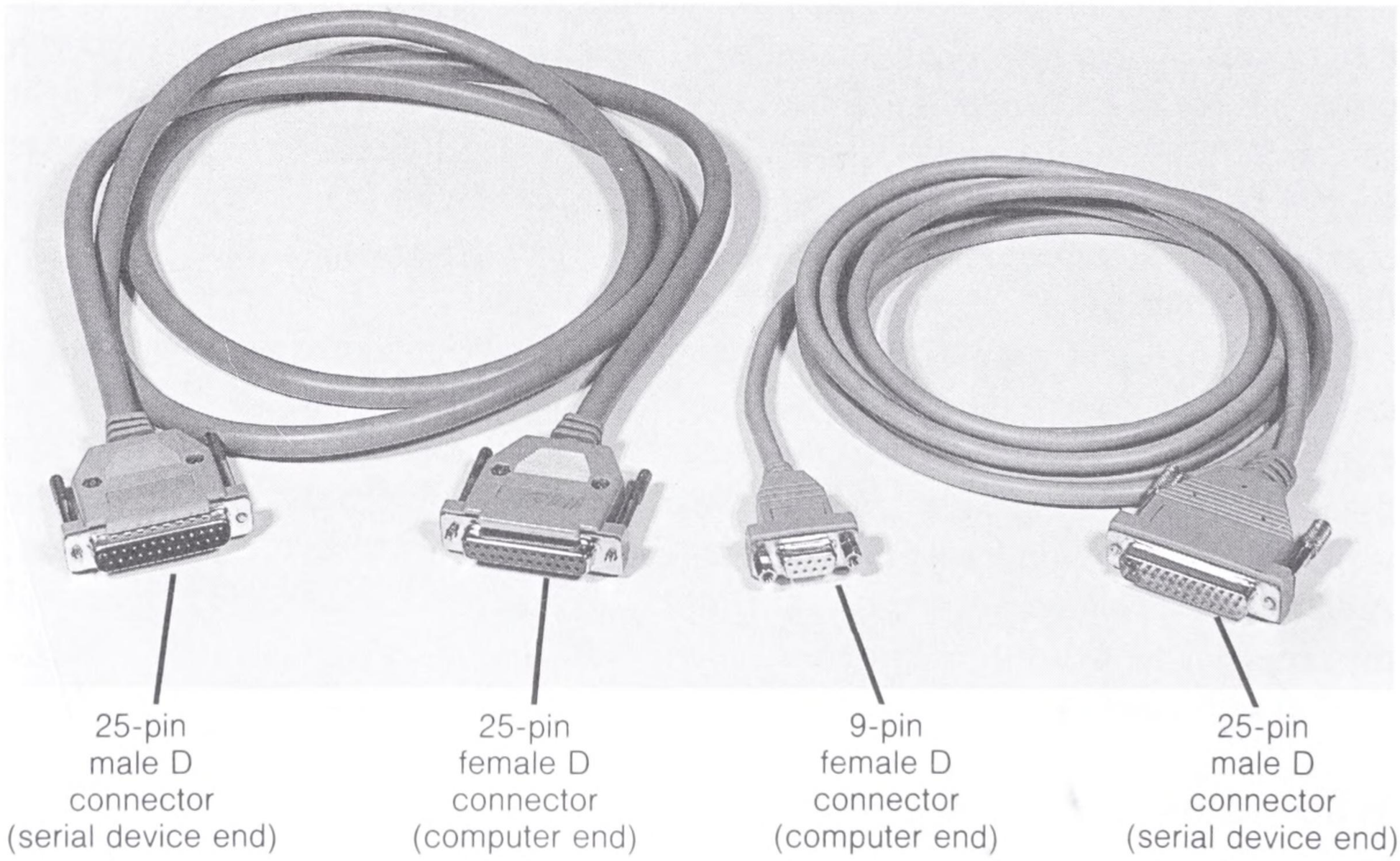


Fig. 5-2 Two types of typical serial cables.

Identifying the first of two parallel ports

If your computer has two parallel ports (25-pin female connectors), you need to know which one is the primary port. Usually, if you have a monochrome monitor, you will have a 25-pin female D connector (parallel port) above or below the 9-pin female monitor connector, which is the primary parallel port called LPT1. The other parallel port will be LPT2. If you have a color monitor and more than one parallel port, you will need to connect the printer to one of the ports and send a test print file to LPT1. If no printing occurs, plug the cable into the other parallel port, and try the same print procedure. The port the printer is connected to when it prints is LPT1, and the other port is LPT2.

Serial vs. parallel

The parallel interface connection is simpler than serial connection. You simply plug in the cable, configure the software for parallel operation (LPT1), and away you go.

The serial (RS-232) interface, on the other hand, is more complicated. The computer and the printer (*device*) must be set up to operate at the same speed (*baud rate*), with the correct parity, the correct number of data bits, and the correct number of stop bits, or there will be no communication. There are many reasons to use serial over parallel. First of all, it is not recommended that a parallel cable be over 30 feet in length, but a serial cable can be up to a 100 feet, and sometimes longer. Secondly, the serial cable can use as few as 2 wires to transfer data in comparison to the parallel cable which requires a minimum of 11 wires. Thirdly, the serial interface can communicate in both directions whereas the parallel interface transfers data only in one direction.

CHAPTER 6

Connecting the printer

THE TWO WAYS to connect a printer are parallel and serial. Most printers are connected in parallel because it is the easiest and least expensive interface to use.

What you should already know

- A computer can have both serial and parallel ports (p. 27).
- Serial communication can transfer data in both directions.
- A parallel port transfers data in one direction only from the computer to the printer.
- A parallel port has a 25-pin female connector (p. 26).
- A serial port has either a 25-pin male or 9-pin male connector (p. 26).
- The most popular serial port specification used is RS-232.
- COM1 is another name for serial port 1.

The parallel interface

Most printers come with a parallel interface and are considered output devices, which means that they only accept data from your computer. Because the parallel

interface will only output data and is easy to use, it is ideal for most printer applications.

Parallel cable to printer connection

Parallel printers have a connector on the back or side which is called a Centronics interface. The name *Centronics* originated from the company that started using this type of interface, and the name was accepted as the standard by the computer industry.

The Centronics connector on the printer shown in Fig. 6-1 has 36 electrical contacts and a D shape so that the plug can only be inserted one way. There are also two spring clips, one on each side of the printer connector, which snap over the cable connector to hold it in place. To connect the cable to the printer, insert the Centronics cable connector into the printer connector, and snap the clips over it.

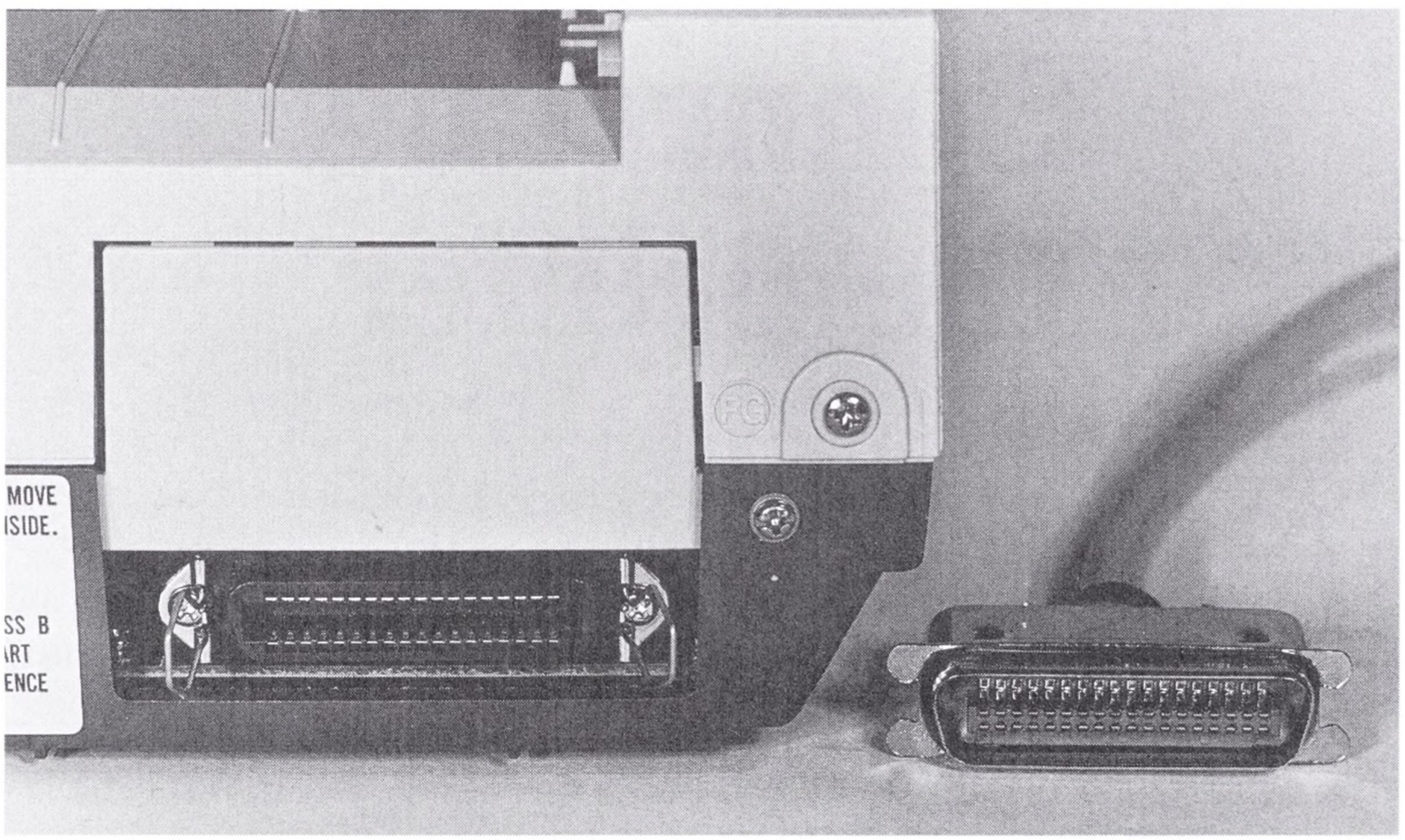


Fig. 6-1 The Centronics connectors of a printer and a printer cable.

Parallel cable to computer connection

The parallel port of the computer has a 25-pin female D connector. The typical printer cable has a 25-pin male connector on one end that plugs into the parallel port on the computer.

The serial interface

The serial printer is not as easy to connect to the computer as the parallel printer mainly because parameters need to be set and because not all serial cables are the

same. Whole books have been written about serial communication, which should give you some idea as to how complicated this subject can get. I'll describe only the most typical computer to serial printer connection in this book.

The printer's serial interface

The first thing you must do is review the instruction manual that came with your serial printer. Look for the serial communication parameters which will probably be the same as the commonly used parameters in Fig. 6-2. The parameters given to you in the manual must be used for proper communication. The manual will also give you a diagram and specifications of the proper cable to be used. Ask your dealer if you are not sure which cable to use. Connect the serial cable by inserting the 25-pin male connector of the cable into the 25-pin female connector on the printer.

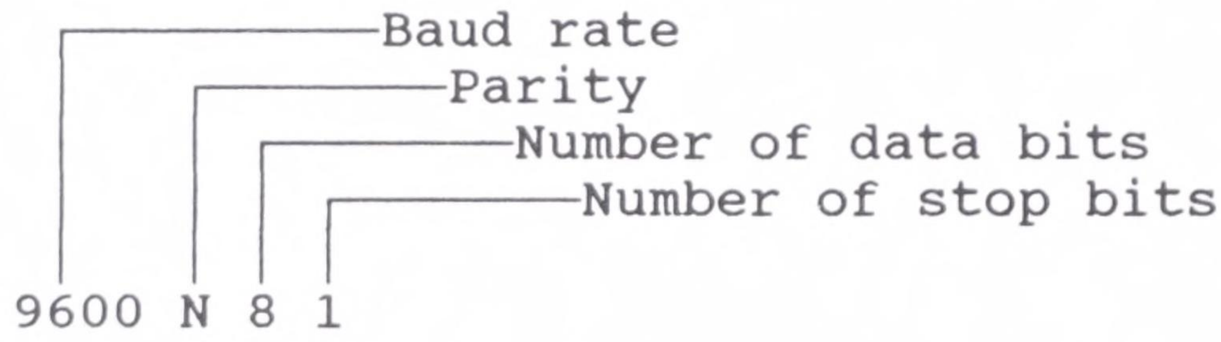


Fig. 6-2 A description of commonly used serial parameters.

The computer's serial port

Connect the 25-pin female connector of the serial cable to either of the serial ports (COM1 or COM2) of the computer. The serial port communication parameters can be set using the DOS MODE command. The following command statement sets COM1 at 9600 baud, no parity, 8 data bits, and 1 stop bit.

```
MODE COM1:96,N,8,1
```

If you are using a word processing program like WordPerfect 5.0, you do not need to use the DOS MODE command. You will set the serial parameters when you select your printer and communication port using WordPerfect 5.x.

Types of printers

There are many types of printers. The most common type of printer is the *dot matrix*. An advantage of the dot matrix printer is that it can print text and graphics on the same page. Dot matrix printers also print faster than daisy wheel printers. Typical dot matrix printers have either 9 pins or 24 pins. The 24-pin printer gives a higher quality output, but also costs more money.

The daisy wheel printer is referred to as a *letter quality* printer. It uses a print wheel like many electric typewriters and operates in much the same way. It has the advantage of letter quality output, but has the disadvantages of being noisy, printing slowly, and being unable to print graphics.

The laser printer is basically a dry paper copying machine which uses a laser to write data to the copying drum. The laser printer can produce text and graphics on the same page and gives a higher quality output than dot matrix printers. The disadvantage of the laser printer is its high cost of operation and inability to make carbon copies, like a dot matrix or daisy wheel printer.

As with most purchases, select a printer that best suits your needs after weighing the price and quality factors.

CHAPTER 7

Basic operation

IN ORDER TO understand the basic operation of a typical computer system, it is important to know how the different components of the computer interact with each other.

What happens when you turn on the computer

Listed here are the important events that take place when booting a computer system:

- The computer is turned on (booted).
- Electricity goes to the main computer board.
- The BIOS instructs the computer to run tests.
- First the keyboard is tested.
- Then the RAM (Random Access Memory) is tested.
- Then the first floppy drive, then the second (if there is one).
- Then the hard disk is tested.
- If all the tests are okay, the BIOS instructs the first floppy drive to load the DOS system. If the system is not found in drive A: then the BIOS looks at hard drive

C: for the system. When the system is found, it is loaded into memory and now DOS is capable of controlling the computer.

What happens during DOS operation

You've booted the computer, and DOS is now in control of the computer system. All functions are now controlled by DOS whether it's accessing the disk drives, sending a file to the printer, accepting input from the keyboard, or loading software into memory. You enter the DIR command to check drive C: for files. DOS executes the command and lists the files on the monitor screen. Now DOS waits for the next command to be entered. Typically, DOS completes the execution of one command and waits for the next command to be entered.

Processing data

The *microprocessor* or *CPU* (Central Processing Unit) does all the number crunching by manipulating the data that is in memory. Microprocessor chips can be identified by their numbers like 8088, 80286, 80386 and 80486. The math coprocessor is much more efficient than the microprocessor for doing high-level math, so the microprocessor sends all the math it can to the coprocessor. This can increase computing speed up to 600 percent. Math coprocessor chips are identified by the numbers 8087, 80287, 80387, and 80487.

Data flow through the computer

Characters that you type into the computer go into computer memory in the form of bytes and are reflected onto the monitor screen. These characters are manipulated by the software program you are using. For example, you are writing a letter to a friend using WordPerfect 5.0. When you save the letter, you give it a name, and WordPerfect 5.0 creates a file by copying the characters in RAM memory to memory space on a floppy disk or hard disk. The file name and disk location of the characters in your letter are kept in a place on the disk called the *file allocation table*. Any time you want to see the letter again, you tell WordPerfect 5.0 to get the file by the name you gave it, and it will be copied from the disk it was saved on to the computer RAM memory where you can work on it. When you decide to print the letter, the characters are sent from computer memory through either a serial or parallel port to the printer.

Compatibility

Back when the IBM PC was a new product, many other manufacturers saw the potential in the computer market and developed their own systems. The Tandy Corporation (Radio Shack), like Texas Instruments, thought that they could make improvements to the IBM PC and take a larger share of the computer market. This was a mistake because their computers could not run IBM compatible software.

Software written for the IBM PC was easy to copy, so many people wanted IBM compatible machines to avoid having to buy special software. To prove the power of IBM compatible software, Tandy is now producing IBM compatible computers, and Texas Instruments, along with many others, have dropped from the computer market.

Compatibility of IBM compatible computers

No compatible or clone computer is 100 percent compatible with an IBM computer because the BIOS in the IBM computer has a built-in basic routine which will only allow the IBM BASIC programming language to run on an IBM computer. Fortunately, this is a minor problem for the compatible owner because Microsoft DOS comes with GW-BASIC which is very similar to IBM BASIC. From my experience, the most frequent compatibility problems arise from video cards, speed of the bus (slots), and BIOS. Computer systems that are pushed to the limit in speed and video resolution must stray from the conservative standards set by IBM with the result of possible incompatibility with some software programs.

Avoiding compatibility problems

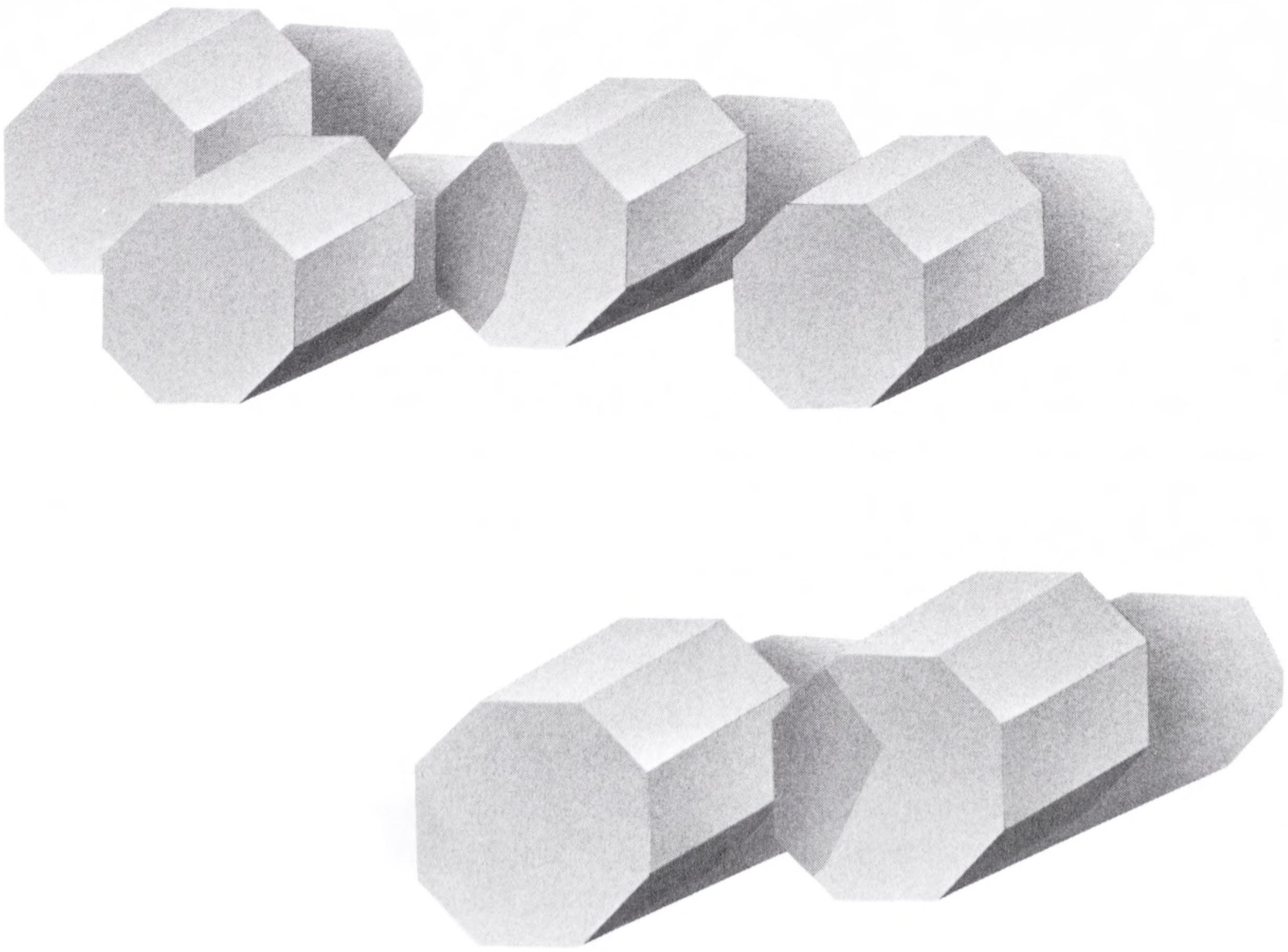
Like a car, some computers are designed better than others. If you buy the lowest priced system, you are likely to get the components that have compatibility problems or that don't operate with all software programs.

I have found some brand-name systems have problems because the manufacturers are slow to correct the bugs in their systems and their systems sit in a warehouse becoming outdated.

Computers are so complex that most people don't know what to look for to avoid incompatibility. Your best protection is a guarantee. When you purchase a computer system, ask the salesperson to indicate on your receipt that your system will be able to run the software you want to use. Also, have him write that your system is as compatible as other major systems sold. If you plan to buy an older used system, you need to be more concerned about compatibility, and you should test your software on it before you close the deal.

Part 2

DOS Training



CHAPTER 8

List of terms

IT IS EXTREMELY important that you read the following terms. Knowing these terms will greatly increase your comprehension when reading this book. These terms will be referenced throughout the book so you can come back and read what you need, when you need it. If you don't completely understand the definition of the terms as you read them, don't get frustrated; they are explained in more detail later in the book.

DOS

DOS is the abbreviation for Disk Operating System. DOS is a collection of programs that allow the disk drives, keyboard, and other parts of the computer to communicate and perform special operations. When the computer is turned on, special DOS system files on the hard disk or DOS system diskette are automatically loaded into the computer memory. Consider the following idea.

A baby cannot walk because it has not yet learned how; there is no walking program in the child's brain. In time, with practice, the baby will develop a program and be able to walk. In comparison, a computer does not learn, but uses a DOS program that will instruct it to do a specific task. For example, the DOS

FORMAT.COM program instructs the floppy drive with the correct sequence of events to produce a formatted floppy diskette.

The two main brands of DOS are IBM-DOS and MS-DOS. Both IBM-DOS and MS-DOS were written by Microsoft, so if you can use one you can also use the other; they are practically identical. PC-DOS is another name for IBM-DOS.

Many DOS versions exist from 1.0 to 4.01. It's good to have a version of 3.1 or later. Each time substantial changs are made to the current DOS version, it is given a new version number, for example, 3.1, 3.2, 3.3, 4.0, 4.01.

DOS system diskette

This is the main DOS diskette which, when you put it in drive A: and turn on the computer, will give an A> prompt on the monitor. This diskette contains the DOS system files and is labeled boot disk, system disk, or master disk.

Formatting

Formatting is a process in which a disk drive makes a series of magnetized circles on a disk. The magnetized circles are used by the disk drive to locate information.

Cold boot

Cold boot is the term used to describe turning on the computer or pushing the reset switch. When a computer cold boots, it counts through the memory, runs all its tests, and loads the DOS system files from the floppy drive A: or the hard drive C:.

Warm boot

A *warm boot* occurs when you hold down the **Ctrl** and **Alt** keys and push the **Del** key. The computer skips the memory count and some of the other tests done in a cold boot. You will want to cold or warm boot the computer if you get stuck or if you find a computer bug. When you reboot the computer, the RAM (random access memory) is cleared. This process is like wiping the slate clean and starting over again. Try the warm boot first, and if that doesn't work, then hit the good old reset button for a cold boot.

Floppy disk

A floppy disk is a 5″ diameter plastic disk coated with a magnetic oxide and sealed into a 5¼″ square plastic protective housing. It is called a *floppy* because it is as thin as a piece of paper (.005) and flops when you try to hold it. Also, a 3½″ floppy disk has a housing that protects 3⅜″ magnetic plastic disk.

Hard Drive

The hard drive is a device that contains a fixed nonflexible disk that rotates much faster than a floppy disk. The benefits of the hard disk drive over the floppy drive include a much higher capacity and much higher data access speed.

<**enter**>

This symbol represents the key named Enter or Return. The commands you type using the keyboard are not acted upon by the computer until you push the Enter key.

Command

Commands control and direct the functions of your computer. You can command your computer to format, copy files, copy disks, compare, print, and run all the programs on your DOS disk or in your \DOS directory. You can type a DOS command in upper- or lowercase letters, or even a mixture of both. For example:

```
C>copy earring.no1 \trinkets
```

Is the same as:

```
C>COPY EARRING.NO1 \TRINKETS
```

is the same as:

```
C>Copy EARRing.No1 \trinkETS
```

Command statement

A *command statement* is a phrase consisting of a DOS command and its related parts that you activate by hitting the Enter or Return key, as indicated by <enter>. Another name for the command statement is *command line*. You can type a command statement in upper- or lowercase or any combination of both. Spaces are used to separate the parts of the command statement.

Some examples include:

```
C>dir <enter>
C>copy A: \b: \<enter>
C>backup C: \a:/s <enter>
C>Restore a: c:/s <enter>
```

\Root directory

This is the main directory of a floppy diskette or hard disk. The ROOT directory is created when the disk is formatted. All the other directories and files are contained within the \ROOT directory.

Current directory

This is the directory you are in at the present time. After using the PROMPT PG command, it is the directory shown in the prompt.

ASCII

ASCII is the abbreviation for American Standard Code for Information Interchange. ASCII characters are the letters and symbols on an IBM compatible keyboard.

File

A file is a group of related information that you name and save on a disk. For example, I wrote this list of terms using a word processor and gave it the file name LISTTERM.CHP. A file name consists of a maximum 8 characters on the left side of the period and a maximum 3 characters on the right side as shown in Fig. 8-1. It makes no difference whether you type the file name in uppercase or lowercase letters, because the computer will convert all lowercase letters to uppercase.

Examples of file names:

```
AUTOEXEC.BAT    DISKCOPY.COM
M.TXT           CONFIG.SYS
WRITE           533$NR$&.__$
WORDS.1         $.MON
A               JOHNNY.BOY
```

The most common file extensions are:

```
.COM   Executable program.
.EXE   Executable program.
.BAS   A BASIC program.
.BAK   Backup of a text.
.BIN   A binary file.
.DAT   A data file.
.PAS   A Pascal program.
.SYS   A system file.
.TXT   A text file (ASCII).
.DOC   A data file also a document file from Microsoft Word.
.TMP   A temporary file.
.DBF   A database file created by dBASE III +.
.WK1   Also .WKS or .WK3 created by Lotus 1-2-3.
.BAT   A batch file, such as AUTOEXEC.BAT.
```

Note: You cannot use spaces in a file name. If you need to separate words in a file name use an underscore:

```
MY_BMW.CAR
```

Program

A *program* is a file which usually has a .COM or .EXE extension and can be run (executed) by typing its file name and hitting the Enter key. The program file is written in a high-level language and compiled into machine code for fast execution.

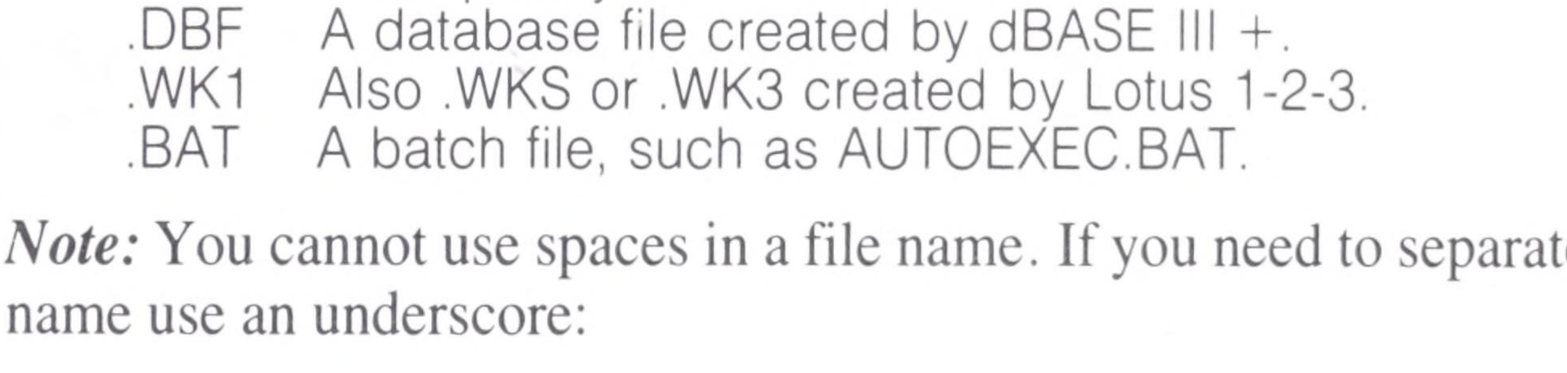


Fig. 8-1 The characters that compose the file name.

A program is created to perform a task such as the FORMAT.COM program (which is used to format diskettes) or the BACKUP.COM program (which is used to copy files and directories from your hard drive to floppy diskettes).

Copy

When you copy a file, you are making a duplicate file in another directory or on another drive.

Directory

An area on a disk which holds a group of related files to keep them separate from other unrelated files.

Subdirectory

A subdirectory is a directory within a directory. If you have a directory called \MONEY and you make a directory called \PENNIES in the directory called \MONEY, then the directory \PENNIES is a subdirectory of the directory \MONEY.

* *
 .

An asterisk is called a *wildcard*. It can take the place of all 8 characters on the left side of the period and/or all 3 characters on the right side of the period. The expression *.* is frequently used to copy all files in a directory to another directory.

Prompt

The prompt is composed of the characters on the screen that indicate the computer wants you to type something. Some examples are C> or A> or C:\> .

Path

A *path* is the route that the computer follows when it is looking for a DOS program file. The path command enables you to run executable program files located on another drive or in another directory from any drive or directory you're in.

Cursor

The *cursor* is the blinking figure (usually an underscore) on the monitor. As you type, the cursor moves ahead to indicate where the next character will appear.

Defaults

Many programs are written to use designated values or parameters if you do not enter any of your own. These values or parameters are called *defaults*. For example, if you type the command DIR, you will get a listing of the files in the current directory, because you did not specify a drive or directory with the command. The

current directory is the default for the DIR command. If you type DIR \TOYS then you will get a listing of the files in the \TOYS directory. When you typed the \TOYS directory, you indicated to the DIR command that you decided not to use the default.

Wait states

Wait states are small time periods that allow slower memory chips enough time so they can keep up with the faster speed of the microprocessor.

BIOS

BIOS means BASIC INPUT/OUTPUT SYSTEM. The BIOS is ROM (Read-Only Memory) chips which contain the basic instructions to control the drives, keyboard, and most other input/output operations. The BIOS also boots the computer and loads the DOS system.

Forward slash /

The /, which is on the same key as the question mark, is usually used with DOS commands as a switch. For example, you can use the BACKUP command in the following ways:

```
BACKUP C: A:/S          (the /s means, also backup subdirectories)
BACKUP C: A:/S/M/A      (the /s switches on subdirectories)
                        (the /m switches on update)
                        (the /a means add to the disk, do not erase the
                         disk)
```

Backslash\

The backslash is located next to the backspace key and is always used to indicate a directory. For example:

```
\NAMES          (computer sees a directory)
NAMES           (computer sees a file name)
\PEOPLE.COM     (computer sees a directory)
PEOPLE.COM      (computer sees a file name)
```

System files

These DOS program files are loaded into memory during computer bootup. For example, IBM-DOS 3.2 has two hidden system files IBMBIOS.COM and IBMDOS.COM. These two files and COMMAND.COM allow your system to boot up to the A> or C> prompt. ***Note:*** If for some reason your computer won't boot up from the hard drive, boot it from your DOS system diskette and check the \ROOT directory of drive C: to be sure that COMMAND.COM is there.

RAM

RAM is the abbreviation for *Random Access Memory*. RAM is the main memory in your computer. If you type a letter in a word processor, you are entering the characters (bytes) into the RAM memory. If the power goes off, the RAM resets to "0," and all information that was in the RAM is lost. Remember to save your work frequently to a floppy or hard disk to prevent data loss. The most common sizes for RAM are 256K, 512K, 640K, and 1Mb.

Extended memory

Extended memory is RAM that exceeds the 640K base memory barrier. If you have a computer with 640K RAM, you have 0K extended memory. If you have a computer with one megabyte of RAM, you have 384K of extended memory.

Expanded memory

If you have a system with extended memory, you can convert the extended memory to *expanded memory* by using a software program. The program tricks the computer into thinking that the extended memory is part of the base memory. For example, you make a spreadsheet using Lotus 1-2-3 which is too big to fit into base memory. You run the program to convert your extended memory into expanded memory. Now the spreadsheet will fit because Lotus 1-2-3 will use the expanded memory as if it was base memory.

CPU

CPU is an abbreviation for *Central Processing Unit* and is the same thing as a microprocessor in a microcomputer. Sometimes the microcomputer without the monitor and keyboard (just the box) is called a CPU. Before the microprocessor was invented, CPU referred to the registers, controllers, and ALU (arithmetic logic unit) of a computer.

Microprocessor

The *microprocessor* is the main computing device that tells the rest of the system what to do and when to do it. It makes all the decisions and calculates the math or sends it to the math coprocessor, if there is one in the system.

Math coprocessor

The *math coprocessor* is a chip that takes over math operations for the microprocessor and can calculate high-level math up to six times faster than the microprocessor. Typical identifying numbers of math coprocessors are 8087-1, 80287-8, 80387-20. The -1, -8, and -20 at the end of the identifying number is the speed, in megahertz, of the coprocessor.

XT compatible

The IBM XT computer was designed and built by the IBM Corporation, and a competitor's copy of this computer is called an XT clone or compatible.

AT compatible

The IBM AT computer was designed and built by the IBM Corporation, and a competitor's copy of this computer is called an AT clone or compatible. The AT compatible is much faster than the XT compatible because it moves 16 bits of data at a time instead of the XT's 8 bits.

CMOS chip

A CMOS chip is an integrated circuit usually found in a package called a DIP. CMOS is an abbreviation for *Complementary Metal Oxide Semiconductor*. Most memory chips are of this type because of their low power usage.

Byte

A *byte* is a series of eight bits. Each bit is an electrical charge or absence of electrical charge. When grouped in a series, eight bits create one byte. Simply think of a byte as being equal to one letter or character.

Megabyte

A *megabyte* (Mb) is roughly a million bytes (1,048,576 bytes). Hard drive capacities and RAM memory are rated in megabytes.

640K bytes

The *K* means 1000 as in kilo, and 640 kilobytes (640K) is approximately 640,000 bytes. This is the maximum size of base RAM memory.

Jumper

A *jumper* is usually a metal connector covered with black plastic. It is used to make a connection between two pins on a printed circuit board. Like a switch, if the jumper is on the pins the switch is on, and if the jumper is taken off the pins the switch is turned off.

^Z

The ^Z (Control–Z) character is the end of the file marker and is created by holding down the Ctrl key and hitting the letter Z key, or by hitting the F6 function key. When DOS sees the ^Z character in a file it knows it has found the end of the file. You will use the ^Z character in Chapter 13, Make a File.

^C

The ^C (Control–C) character is created by holding down the Ctrl key and hitting the letter C key. It is used to stop the current operation and return control of the system to the user. For example, you use the DIR command to list the files in a directory of 450 files. Rather than wait for the end of the list, you can Ctrl–C at any time to stop the DIR command and regain control of the system.

CHAPTER 9

Load DOS

THE DEALER who sold you your computer system might have formatted the hard drive and loaded the DOS files in a directory called \DOS. If he didn't do this, you will need to do it yourself. This chapter exists for the sole purpose of enabling you to partition, format, and make a \DOS directory for your hard drive.

Why you load DOS

The main reason for making the \DOS directory and copying the DOS program files into it is the need to use the DOS program files throughout this book. Making directories and copying files are covered in separate chapters later in this book.

What you should already know

- Type the letters shown in **boldface** type.
- The first floppy drive in your computer is called drive A:.
- The hard drive (hard disk) in your computer is called drive C:.
- The cursor (usually an underscore) will be blinking on the screen.
- The A> and the C> are called prompts (p. 45).
- Booting is the process of turning on the computer which loads the DOS system files and displays a prompt on the monitor screen (p. 42).

☑ The DOS system diskette is also called a DOS boot disk (p. 42).
☑ All disks must be formatted one time when new (p. 124).

Existing hard drive conditions

You will have one of the four following conditions:

- *The hard drive in your system is DOS formatted and has a directory called \DOS containing all the DOS programs*. This is the end result we need to achieve. If you purchased your system from a local dealer, you probably have a \DOS directory containing the DOS program files and can skip this chapter.
- *The hard drive in your system is DOS formatted, but has no \DOS directory containing DOS programs*. You will need to create a \DOS directory and copy in the DOS program files.
- *The hard drive in your system has been low-level formatted, but has not been DOS formatted, and therefore has no \DOS directory*. You will need to create a partition(s), format the partition(s), make a \DOS directory, and copy the DOS program files into the \DOS directory. If you purchased your system by mail order, you probably fit in this category.
- *The hard drive in your system has not been low-level formatted and cannot be used until the low level formatting has been completed*. Low-level formatting should have been done by the dealer that sold you the computer system. Take your system back to the dealer and ask him to low-level format the hard drive.

Is your hard drive formatted?

First, find out if your system boots from the hard drive. Check the floppy drives and make sure there are no floppy diskettes in the drive(s). Now turn on the computer.

If you see the error message:

```
Drive not ready error   (messages vary depending upon BIOS)
Insert BOOT diskette in drive A:
Press any key when ready
```

or if you see a similar error message, your hard drive probably has not been DOS formatted, and you have no \DOS directory.

Caution: If you have something other than a new computer, it is possible that it would not boot from the hard drive due to improper setup information or a missing COMMAND.COM program. Get assistance from a professional if this could be the case.

If your computer did boot and you have a C> prompt on the monitor, then do not do the next section DOS Formatting the Hard Disk. Skip to Checking for the \DOS Directory.

DOS formatting the hard disk

Formatting the hard drive will erase all software on the hard drive. You should not do this unless you are positive that the drive has not already been formatted with DOS.

Boot your computer. Place your DOS system diskette into floppy drive A:. Now turn on your computer.

After a moment, you will be asked to enter the time and date. Hit the Enter key two times, and you will see the A> prompt on the monitor screen.

Before DOS formatting, you must create a DOS bootable partition. The FDISK.COM program on the DOS system diskette is used to accomplish this. The following FDISK example is from MS-DOS 3.3. Earlier versions of DOS will not allow extended partitions.

Execute the FDISK.COM program, and create a partition:

A>**fdisk** <enter>

You will get a main menu screen similar to the following:

```
Fixed Disk Options

1.) Create a DOS partition
2.) Make a Partition Active
3.) Delete a DOS partition
4.) Display Partition Data

     Enter Choice: [ ]
```

To make a partition, do the following:

1 <enter>

```
Current Fixed Disk Drive: 1

  1. Create Primary DOS partition
  2. Create Extended DOS partition

  Enter choice: [1]
```

1 <enter>

If any partitions exist, you don't need to make any, so hit the Esc key a few times until you exit the program.

If no partitions exist, you will get the following:

```
Create Primary DOS Partition

Current Fixed Disk Drive: 1

Do you wish to use the maximum size
for a DOS partition and make the DOS
partition active (Y/N) . . . . . ? [Y]
```

If you have a hard disk which is 32 megabytes or less answer Y. If you have a hard disk which is over 32 megabytes answer N.

If you answered Y, then the partition will be made, and you will be asked to restart the computer.

If you answered N, then there are more steps to complete, so let's use N for the following example making partitions for a 64 megabyte hard drive:

N <enter>

```
Create Primary DOS Partition

Current Fixed Disk Drive: 1

Total disk space is 970 cylinders.
Maximum space available for partition
is 503 cylinders.

Enter partition size . . . . . : [503]
```

Hit <enter> (the Enter key):

```
Create Primary DOS Partition

Current Fixed Disk Drive: 1

Partition   Status     Type      Start  End   Size
C: 1                   PRI DOS       1  503    503

Primary DOS partition created
```

Now, to create the extended DOS partition, hit the Esc key:

```
Fixed Disk Options

1.) Create a DOS partition
2.) Make a Partition Active
3.) Delete a DOS Partition
4.) Display Partition Data

      Enter Choice:[1]
```

1 <enter>

```
Create Primary DOS Partition

Current Fixed Disk Drive: 1

      1. Create Primary DOS partition
      2. Create Extended DOS partition

Enter choice: [2]
```

2 <enter>

```
Create Extended DOS Partition

Current Fixed Disk Drive: 1

Partition   Status     Type      Start  End   Size
  C: 1                 PRI DOS       1  503    503

Total disk space is 970 cylinders.
Maximum space available for partition
is 466 cylinders.

Enter partition size . . . . . : [466]
```

Hit the Enter key:

Create Extended DOS Partition

Current Fixed Disk Drive: 1

Partition	Status	Type	Start	End	Size
C: 1		PRI DOS	1	503	503
2		EXT DOS	504	969	466

Extended DOS partition created

Hit the Esc key:

No logical drives defined

Total partition size is 466 cylinders.

Maximum space available for logical drive is 466 cylinders.

Enter logical drive size . . . . . : [466]

Hit the Enter key, and logical drive D: will be created:

Create Logical DOS Drive(s)

Drv	Start	End	Size
D:	504	969	466

All available space in the Extended DOS partition is assigned to logical drives.

Hit the Esc key to return to the FDISK main menu:

Fixed Disk Options

1.) Create a DOS partition
2.) Make a Partition Active
3.) Delete a DOS Partition
4.) Display Partition Data

Enter Choice:[1]

WARNING! No partitions marked active

Now you must set the partition active so it can be DOS bootable:

2 <enter>

Change Active Partition

Current Fixed Disk Drive: 1

Partition	Status	Type	Start	End	Size
C: 1		PRI DOS	1	503	503
2		EXT DOS	504	969	466

Total disk space is 970 cylinders.
Enter the number of the partition you want to make active . . . . . : [1]

1 <enter>

Change Active Partition

```
Current Fixed Disk Drive: 1

Partition   Status     Type      Start   End   Size
  C: 1        A      PRI DOS       1     503   503
     2               EXT DOS     504     969   466

Total disk space is 970 cylinders.

Partition 1 made active
```

Now push the Esc key to exit the FDISK program. Push the reset button to reboot the computer.

Your hard drive is now ready for DOS formatting.

Format the hard drive with the DOS system

The following command will format the hard drive with the DOS system:

A>**format c:/s** <enter>

You will see the message:

```
WARNING, ALL DATA ON NON-REMOVABLE DISK
DRIVE C: WILL BE LOST!
Proceed with Format (Y/N)?
```

y <enter>

You will now be asked to enter a volume label. Just hit the Enter key.

Formatting of drive C: will begin. When the formatting is completed, the DOS system files will be put on the hard drive so it will be bootable.

Let's reboot the system. Take the floppy disk out of drive A:, hit the reset button.

When the computer boots, you will be asked for the time and the date, and then you will see a C> prompt on the monitor screen.

Checking for the \DOS directory

Read this section if your dealer formatted the hard drive and you don't know if you have a \DOS directory, or if you have a \DOS directory, but you don't know if it contains DOS program files.

Turn the computer on. You should get a C> prompt on the monitor screen. Now use the DIR command to list the files on the \ROOT directory:

C>**dir *.*** <enter>

```
    Volume in drive C has no label
    Directory of C:\

COMMAND   COM     # of bytes   <date>   <time>
DOS   <DIR>       (This is the directory you're looking for)
xxxxxxxx xxx      (other existing files will also be listed)
        xx File(s)              xxxxxx bytes free

C:\>
```

If the DOS directory exists as shown, then look inside the directory to be sure the DOS files are there:

```
C>dir \dos <enter>
 Volume in drive C has no label
 Directory of C:\DOS
----------------------------------------
------file names listed here------
----------------------------------------
----------------------------------------
        # bytes free
C>
```

If the listing of the DOS directory above scrolls through a bunch of file names, they have been installed for you.

If the \DOS directory exists, but is empty, you will get the following listing:

```
C>dir \dos <enter>
 Volume in drive C has no label
 Directory of C:\DOS
.
..
            # of bytes free
C>
```

If you could not find the \DOS directory on the C: drive, follow the instructions in the following section to make the directory and load the DOS files into that directory.

Making the \DOS directory

To make the \DOS directory, simply type:

```
C>md \dos <enter>
C>
```

Copying DOS files into the \DOS directory

You will probably have two DOS diskettes. One is the System Diskette and the other is the DOS Supplemental Programs. Put the System Diskette in drive A:, and type the following:

```
C>copy a:\*.* c:\dos <enter>
```

Now put the DOS Supplemental Programs Diskette into drive A:, and type the following:

```
C>copy a:\*.* c:\dos <enter>
```

The command reads, "Copy from drive A:, \ROOT directory, all files, to drive C:, \DOS directory."

It's time to check the \DOS directory you just made for the DOS files we copied (duplicated) from the floppy disks in drive A:.

```
C>dir \dos <enter>

 Volume in drive C has no label
 Directory of C:\DOS

 ----------------------------------------
 ------file names listed here------
 ----------------------------------------
 ----------------------------------------

          # bytes free

C>
```

If you got the directory listing shown, you did the procedure correctly. If you didn't get the directory listing, go back to the section on making the \DOS directory and try it again. More than likely you made a typing error.

Now you are ready for the DOS training section of this book.

CHAPTER 10

Changing disk drives

THE DISK drives in your computer can store your ASCII, data, and program files. There will be times when you want to move from drive to drive to make file manipulation safer and easier.

Why you change drives

You should change from a disk drive to another disk drive to reduce the amount of typing you need to do. The operations of many DOS commands default to the current drive and directory so you don't need to type the drive letter and path each time you execute a command.

What you should already know

- Type the letters shown in **boldface** type.
- The first floppy drive in your computer is called drive A:.
- If you have two floppy drives, the second is called drive B:.
- The hard drive (hard disk) in your computer is called drive C:.
- The cursor is the blinking light waiting for you to type (p. 45).

- The C> or C:\> is called the prompt (p. 45).
- Typing PROMPT PG will enable you to see the current directory and change the C> to C:\> (p. 68).
- A default that is a value that is determined by the program and only used if you don't enter your own value (p. 45).

Changing drives

Changing drives is really quite simple. Begin by turning on your computer so you have the C> prompt. Insert a floppy disk in each floppy drive in your system and push down the lever(s). Use floppy diskettes you know have been formatted or that have software programs on them. Brand new diskettes are generally not formatted and should not be used until they are formatted, or you might get the following error message:

```
Not ready error reading drive A
Abort, Retry, Ignore?
```

If you got this error message, then you have one of the following problems:

- The door on the floppy drive is not closed.
- The floppy disk has not been formatted or is bad.

These steps will get you back to drive C: First hit the letter A key to Abort. You will get the same message again. Now hit the letter I key for Ignore and you will see the line:

```
Current drive is no longer valid>
```

Now type C:<enter>, and you will end up at the C> prompt.

Don't worry if you got this error message. It's a very common error, and everyone using a computer will get it occasionally.

With floppies in drive A: and B:, type the following:

C>**a:** <enter> (this will move you to drive A:)

A>**c:** <enter> (this will move you to drive C:)

C>**a:** <enter> (this will move you back to drive A:)

A>**b:** <enter> (type b: only if you have 2 floppy drives)

If you typed B: <enter> and don't have the second floppy drive, you will get the following message:

```
Insert diskette for drive B: and strike
any key when ready
```

Hit <enter>, and you will get a B> prompt and drive A: will work as if it was drive B:.

B>**a:** <enter>

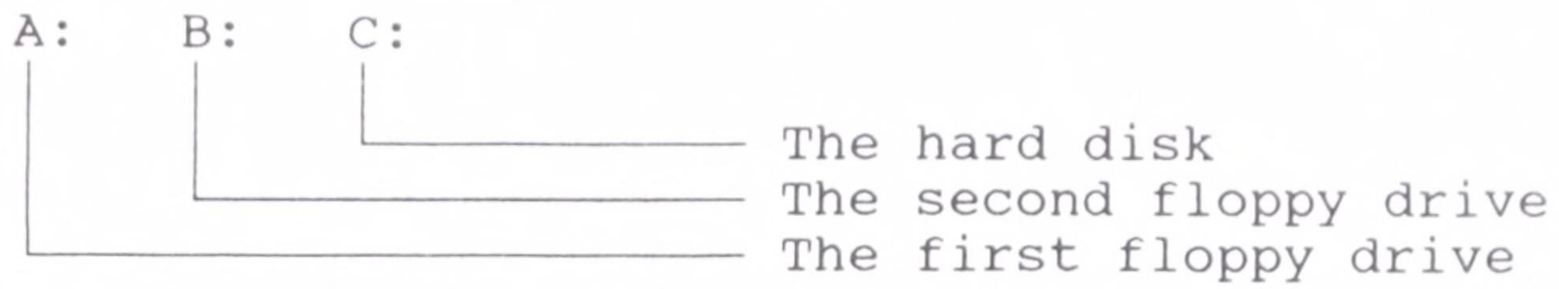


Fig. 10-1 Drive letters and their associated disk drives.

Now you get the following message:

```
Insert diskette for drive A: and strike
any key when ready
```

Hit the Enter key again and you will be back to the A> prompt.

```
A>
```

This process is useful for copying a file on a diskette to another diskette and will be explained in greater detail in Chapter 19, Copy a File.

Remember: The drive you want is called by its letter followed by a colon.

Extra practice

To review:

- The standard drive types are: floppy #1 is drive A:
  floppy #2 is drive B:
- The hard disk (or fixed disk) is drive C:
- To change from one drive to another, simply type the drive letter followed by a colon.
- The PROMPT PG command will show the current directory in the prompt.

Do the following:

C>**a:** <enter> (change to the A: drive)

A>**c:** <enter> (change back to the C: drive)

C>

CHAPTER 11

The DIR command

THE DIR COMMAND is one of the most used commands. It is valuable when making sure you are in the right directory when you are copying or deleting groups of files.

Why use DIR

The DIR command is used to display the names of the files in a directory. You can add any combination of drive letter, directory name, and/or file specification to the DIR command to list the contents of any directory on any drive. Using the DIR command alone will list the files in the current directory.

What you should already know

- Type the letters shown in **boldface** type.
- The first floppy drive is drive A:, the hard disk is drive C:
- The blinking light on the monitor is called the cursor (p. 45).
- The C> or C:\> is called the prompt (p. 45).
- Typing PROMPT PG will enable you to see the current directory in the prompt (p. 68).

- A forward slash / is used as a switch to activate alternate parameters available with a command (p. 46).
- All disks and diskettes formatted using DOS will have a \ROOT directory (p. 43).

The command: DIR

Displaying the current directory in the prompt

Usually, when you boot the computer or when you change to another drive, the computer will put you in the \ROOT directory. To be sure you are in the \ROOT directory, use the PROMPT command to display the current directory in the prompt:

```
C>prompt $p$g <enter>
C:\>
```

Above, you see the backslash in the prompt means you are in the \ROOT directory.

Using the DIR command

Try using the DIR command:

```
C:\>dir <enter>
     Volume in drive C has no label
     Directory of C:\

----------------------------------------
------file names listed here------
----------------------------------------
----------------------------------------

     # bytes free
C:\>
```

You just listed all the files and subdirectories that exist in the \ROOT directory of drive C:. Using the DIR command enables you to know where your files and directories are located.

Go to drive A: (you must have a diskette in drive a:):

```
C:\>a: <enter>
```

List the files of the \ROOT directory of the floppy in drive A:

```
A:\>dir <enter>
     Volume in drive A has no label
     Directory of A:\

----------------------------------------
------file names listed here------
----------------------------------------
----------------------------------------
```

```
        # bytes free
    A:\>
```

Now go back to drive C:

```
    A:\>c: <enter>
    C:\>
```

Check the \ROOT directory of drive C:

```
    C:\>dir <enter>
        Volume in drive C has no label
        Directory of C:\

    ----------------------------------------
    ------file names listed here------
    ----------------------------------------
    ----------------------------------------

        # bytes free
    C:\>
```

We can list the files on any drive or in any other directory without regard to the current drive or directory. Right now the current directory is the \ROOT directory of drive C:, which is shown in the prompt.

List the files in the \DOS directory:

```
    C:\>dir \dos <enter>
        Volume in drive C has no label
        Directory of C:\DOS    (the \DOS directory)

    ----------------------------------------
    ------file names listed here------
    ----------------------------------------
    ----------------------------------------

        # bytes free
    C:\>
```

You got the listing you requested, but that long list just flew on by because the \DOS directory contains more than 25 files. If you haven't taken a speed reading course, DOS has a solution for you. You can use a switch with the command to modify the way it works.

Using switches

Adding the /p switch causes the DIR command to scroll the file listing one *page* at a time. A normal monitor screen page is 25 lines. You will see the phrase STRIKE A KEY WHEN READY at the bottom of the monitor screen until the listing is completed. Simply hit a key each time you want to see more of the listing.

List the files in the \DOS directory using the /p switch:

C:\>**dir \dos** /p <enter>

```
     Volume in drive C has no label
     Directory of C:\DOS    (the \DOS directory)

----------------------------------------
------file names listed here------
----------------------------------------
----------------------------------------
Strike a Key When Ready   (hit a key to see more of the listing)
C:\>   (when the listing is complete the prompt will appear)
```

The /w switch is used to create a *wide* listing of a directory. List the files in the \DOS directory using the /w switch:

C:\>**dir \dos /w** <enter>

```
     Volume in drive C has no label
     Directory of C:\DOS    (the \DOS directory)

----------------------------------------------------------------------
----------------------file names listed here----------------------
----------------------------------------------------------------------
----------------------------------------------------------------------
          # bytes free
C:\>
```

As you can see, the files are listed in six columns so many more files can be listed on one page.

And you didn't think you could do it!

You've learned a little about the PROMPT command in this chapter. The next chapter goes into more detail about the PROMPT command and shows you a unique way to use it.

CHAPTER 12

The PROMPT command

YOU'VE HAD SOME exposure to the PROMPT command in previous chapters because it was necessary for you to see the current directory in the A> or C> prompt. This chapter will explain the PROMPT command in more detail.

What it does

The PROMPT command enables you to see which directory you're in by adding the name of the directory to the C> prompt. You can also add your own message to the prompt using the PROMPT command.

What you should already know

- Type the letters shown in **boldface** type.
- The symbol <enter> means press the Enter key.
- All files and directories originate from the \ROOT directory (p. 43).
- A command is an order you give the computer to make it do something (p. 43).
- A directory is an area on a disk which separates groups of related files from unrelated files (p. 68).

☑ The current directory is the directory you see in the prompt or, in other words, the directory you are in.

The command: PROMPT PG (the $P gives the current directory)
(the $G adds the > character)

Using the PROMPT command

Turn on your computer so you have a C> prompt:

C>

You know you are on drive C:, but you have no way of knowing which directory you are in (the current directory).

Type the following:

C>**prompt pg** <enter>

C:\>

In the C> prompt above you can see the backslash \ which, when by itself, designates that you're in the \ROOT directory.

Which directory are you in when you see the prompt below?

C:\NAMES>

If you said the \NAMES directory, you are correct.

What is the current directory in the prompt below?

C:\PEOPLE>

That's right! The \PEOPLE directory.

Which directory are you in now?

C:\>

Correct. The \ROOT directory.

How about this next one?

C:\CARS>

If you said the \CARS directory then you are right.

What do you think would happen if you typed only the word PROMPT? Try it:

C:\>**prompt** <enter>

C> (the current directory name is gone from the prompt)

Look at the C> prompt. Which directory are you in?

You could be in the \CARS directory or the \NAMES directory or any directory on the disk. There is no way you can know exactly which directory you're in from looking at the C> prompt.

Enter the command:

```
C>prompt $p$g <enter>
C:\>
```

Just for excitement, try the following:

```
C:\>prompt Yes Master?$__$P$G <enter>
Yes Master?
C:\>
```

Now your computer knows who the master is. When you finish this book, your computer will no doubt be bowing at your feet!

To change back to the standard prompt, do the following:

```
Yes Master?
C:\>prompt $P$G <enter>
C:\>
```

In Chapter 25, you will learn how to make an AUTOEXEC.BAT file that will automatically load the PROMPT command each time you turn on the computer.

Don't you just love computers? Yeh!

CHAPTER 13

Make a file with COPY CON

FILES ARE THE LIFEBLOOD of the computer system. Files store data and control the operation of the computer system by carrying bytes (characters) to and from different parts of the system.

What a file is

A *file* is a group of related information which you can save on a hard drive or diskette. A file could be a document created with a word processor or a mailing list created with a database program. When you create a file, the computer records the name of the file and the disk locations of the bytes in the file in the *File Allocation Table* (FAT).

There are three main types of files (illustrated in Fig. 13-1):

- An *ASCII* file contains only the characters you can type with the keyboard. You will be making some ASCII files later in this chapter that you will use throughout this book.
- A *data* file contains the characters from the keyboard and also control codes and graphics characters that are created by word processors and similar user application programs.

- A *program* file is created by compiling high-level languages. Compiling converts the object file written by a programmer into machine language so that it runs faster. Because program files are compiled, you cannot use the DOS TYPE command to read the contents of these files. Program files are frequently executable files and typically have the .EXE or .COM extensions. WP.EXE and FORMAT.COM are examples of program files.

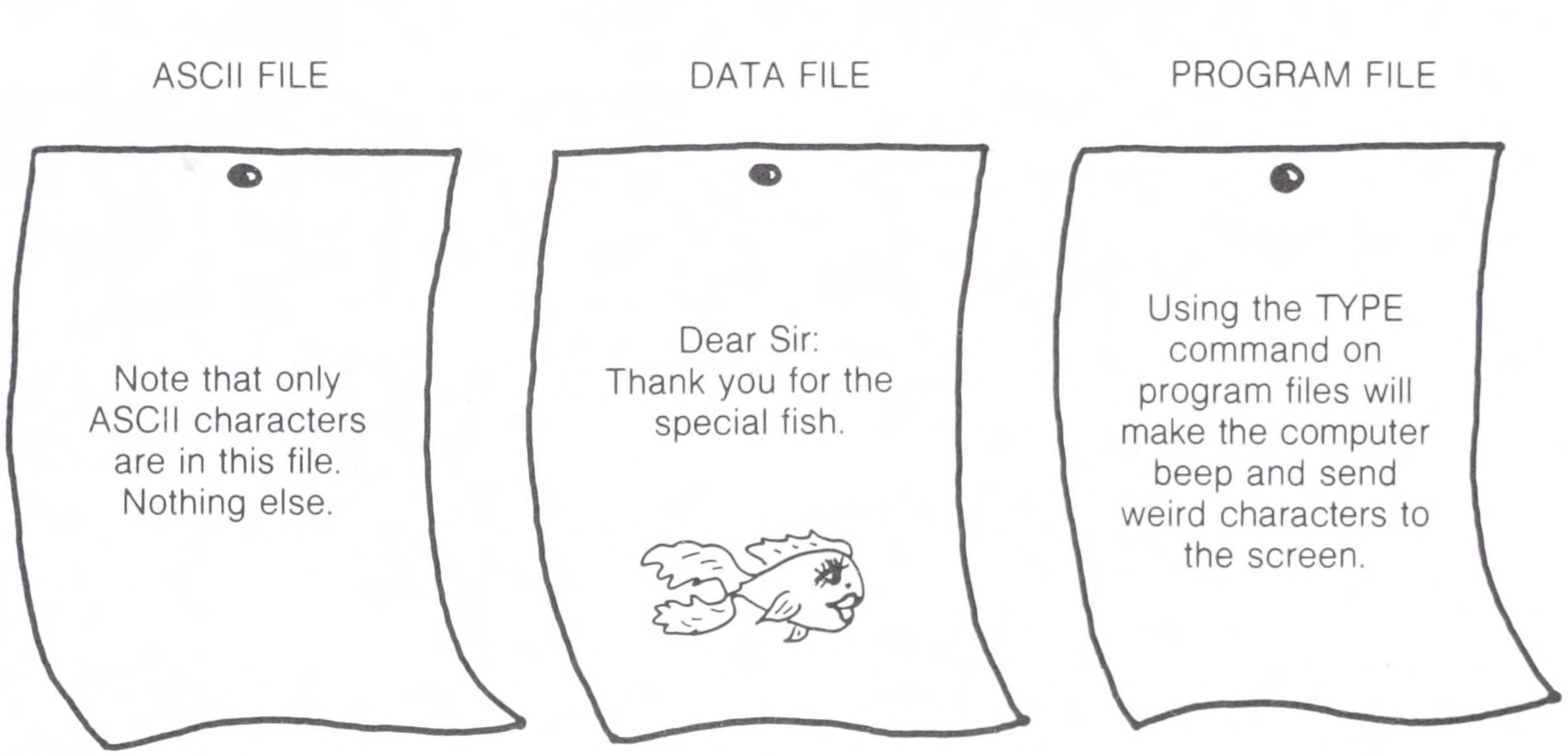

ASCII FILE
Note that only ASCII characters are in this file. Nothing else.
DATA FILE
Dear Sir:
Thank you for the special fish.
PROGRAM FILE
Using the TYPE command on program files will make the computer beep and send weird characters to the screen.

Fig. 13-1 The three basic types of files.

What you should already know

- ☑ Type the letters shown in **boldface** type.
- ☑ The symbol <enter> means press the Enter key.
- ☑ Pushing the (F6) function key gives the character ^Z (p. 48).
- ☑ A command is an order you give the computer to make it do something (p. 43).
- ☑ A command statement is a phrase consisting of a command and its related parts (p. 43).
- ☑ The prompt will show the current directory when you type PROMPT PG (p. 68).
- ☑ Typing PATH C:\DOS will enable you to use DOS commands from anywhere in the computer (p. 45).
- ☑ The ROOT directory is the area which contains all other files and directories (p. 43).
- ☑ A file name consists of a maximum 8 characters to the left of the period and the extension is a maximum 3 characters to the right of the period. Example file names are AUTOEXEC.BAT and BIRD.1 (p. 44).
- ☑ A file name or extension can *never* contain spaces.

To see the current directory in the prompt, type the following:

C>**prompt pg** <enter>

C:\> (the backslash \ means the \ROOT directory is current)

Making ASCII text files

You can make an ASCII text file to store information or to perform multiple operations, such as automatically changing system parameters and executing commands when you boot your system. At the end of this book you will use the COPY CON command to make the CONFIG.SYS and AUTOEXEC.BAT files which will configure your system and execute multiple commands. The files you make in this section will simply store information.

The command: COPY CON (means COPY from CONsole or keyboard)

In Fig. 13-2, the spaces in the command statement can be assigned words to help you remember what is going where. The command statement in Fig. 13-2 reads: copy from keyboard to BOB.TXT.

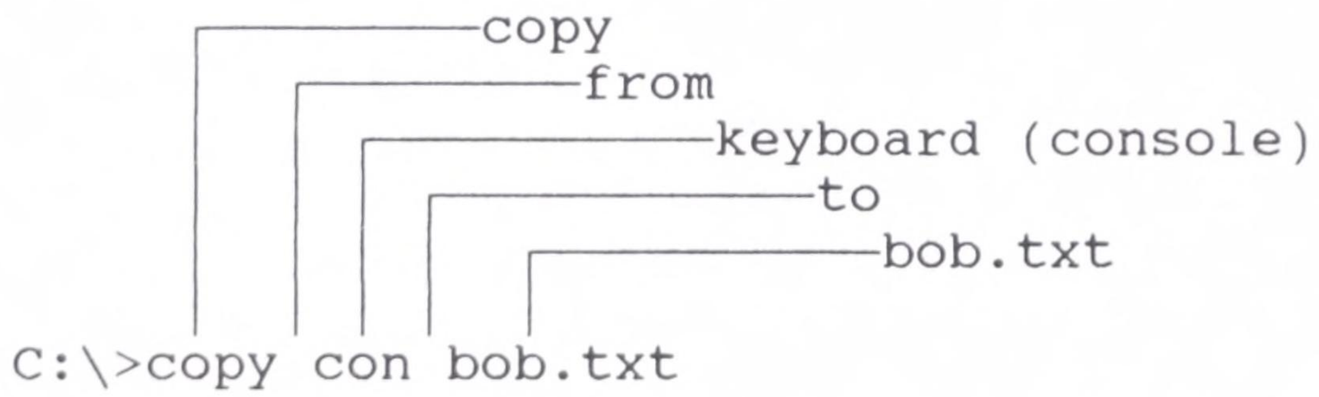


Fig. 13-2 A description of the parts of a basic command statement.

Note: If you make a mistake, hold down the Ctrl key and hit the letter C to cancel making a file. Then retype the COPY CON command statement to start over again.

Practice makes perfect. Make a file with the name BOB.TXT:

C:\>**copy con bob.txt** <enter>
My name is Bob. <enter>
The end of this file. <enter>
^Z <enter> (***Note:*** Push the F6 function key to get ^Z to end the file and hit the Enter key.)

1 file(s) copied

C:\>

Use the DIR command to be sure BOB.TXT was created:

C:\>**dir** <enter>

Volume in drive C has no label
Directory of C:\

```
COMMAND   COM    # of bytes <date> <time>
BOB       TXT    41 (the file you made)
xxxxxxxx  xxx    (other existing files might also be listed)
      xx  File(s)          xxxxxx bytes free

C:\>
```

Now make a file with the name JOHN.DOC:

C:\>**copy con john.doc** <enter>
This is John's file. <enter>
The end of this file. <enter>
^Z <enter> (***Note:*** Push the F6 function key to get ^Z to end the file then hit the Enter key.)

```
        1 file(s) copied

C:\>
```

Use the DIR command to be sure JOHN.DOC was created:

C:\>**dir** <enter>

```
     Volume in drive C has no label
     Directory of C:\

COMMAND   COM    # of bytes <date> <time<
BOB       TXT    41 (the first file you made)
JOHN      DOC    45 (the second file you made)
xxxxxxxx  xxx    (other existing files might also be listed)
      xx  File(s)          xxxxxx bytes free

C:\>
```

Make a third file named SUE.GRL:

C:\>**copy con sue.grl** <enter>
My name is Sue. <enter>
End of file. <enter>
^Z <enter> (***Note:*** Push the F6 function key to get ^Z to end the file then hit the Enter key.)

```
        1 file(s) copied

C:\>
```

Use the DIR command to be sure SUE.GRL was created:

C:\>**dir** <enter>

```
     Volume in drive C has no label
     Directory of C:

COMMAND   COM    # of bytes <date> <time>
BOB       TXT    41   (the first file you made)
JOHN      DOC    45   (the second file you made)
SUE       GRL    31   (the third file you made)
```

```
xxxxxxxx      xxx     (other existing files might also be listed)
      xx      File(s)          xxxxxx bytes free

C:\>
```

Let's make another file named MARY.GRL:

```
C:\>copy con mary.grl <enter>
Hello, my name is Mary. <enter>
The end.                <enter>
^Z <enter>   Note: Push the F6 function key to get ^Z to end the file,
                   then hit the Enter key.)

      1 file(s) copied

C:\>
```

Use the DIR command to be sure MARY.GRL was created:

```
C:\>dir <enter>

     Volume in drive C has no label
     Directory of C:

COMMAND   COM    # of bytes <date> <time>
BOB       TXT    41   (the first file you made)
JOHN      DOC    45   (the second file you made)
SUE       GRL    31   (the third file you made)
MARY      GRL    35   (the fourth file you made)
xxxxxxxx  xxx    (other existing files might also be listed)
      xx  File(s)          xxxxxx bytes free

C:  >
```

Note: The backslash \ in the C:\> prompt indicates you're in the \ROOT directory.

You have just created four ASCII text files and checked the \ROOT directory with the DIR command to be sure they exist.

Try making a file using your name for the file name:

```
C:\>copy con richard <enter>
Hello, my name is Richard. <enter>
You should know how to use the COPY CON command. <enter>
This is an ASCII file. It only contains text. <enter>
^Z <enter>     (Note: Push the F6 function key to get ^Z to end the file
                      then hit the Enter key.)

      1 file(s) copied

C:\>
```

Use the DIR command to be sure (your name) was created:

```
C:\>dir <enter>

     Volume in drive C has no label
     Directory of C:
```

```
COMMAND   COM   # of bytes <date> <time>
BOB       TXT   41   (the first file you made)
JOHN      DOC   45   (the second file you made)
SUE       GRL   31   (the third file you made)
MARY      GRL   35   (the fourth file you made)
RICHARD                (your name should be here)
xxxxxxxx    xxx      (other existing files may also be listed)
      xx File(s)              xxxxxx bytes free

C:\>
```

And you thought this would be difficult.

You just made a number of ASCII text files. The text that you typed into those files can be viewed on the monitor screen using the TYPE command covered in the next chapter.

CHAPTER 14

The TYPE command

DOS GIVES YOU the TYPE command so you can view the contents of an ASCII file. You can use the filter called MORE with the TYPE command to show one screen of data at a time. A filter is used to alter the output of a command.

Why type a file

Some ASCII files are used to store data, and others are used to execute a series of commands and set parameters.

The AUTOEXEC.BAT and CONFIG.SYS files are ASCII files that contain a list of command statements. You can list these commands on the monitor screen using the TYPE command. Some software programs use ASCII files to store data. The communication program PROCOMM comes with an instruction manual contained in an ASCII file which you can TYPE to the monitor screen or to the printer. Many software programs have files with the names READ.ME or README or README.1ST which contain information about the program. You can also TYPE the contents of these files to the monitor screen or printer.

What you should already know

- Type the letters in **boldface**.
- The symbol <enter> means press the Enter key.
- ASCII files only contain the characters you see on the keyboard (p. 43).
- Data files can contain graphics and control characters (p. 71).
- Program files are compiled and not legible when using the TYPE command (p. 71).
- The COPY CON command is used to make an ASCII file (p. 73).

The command: TYPE (display file contents)

In Fig. 14-1, you can see that you don't need to specify that the data output is to be displayed on the monitor screen. The TYPE command knows to send all output to the monitor screen without being told to do so. This is called defaulting to the monitor.

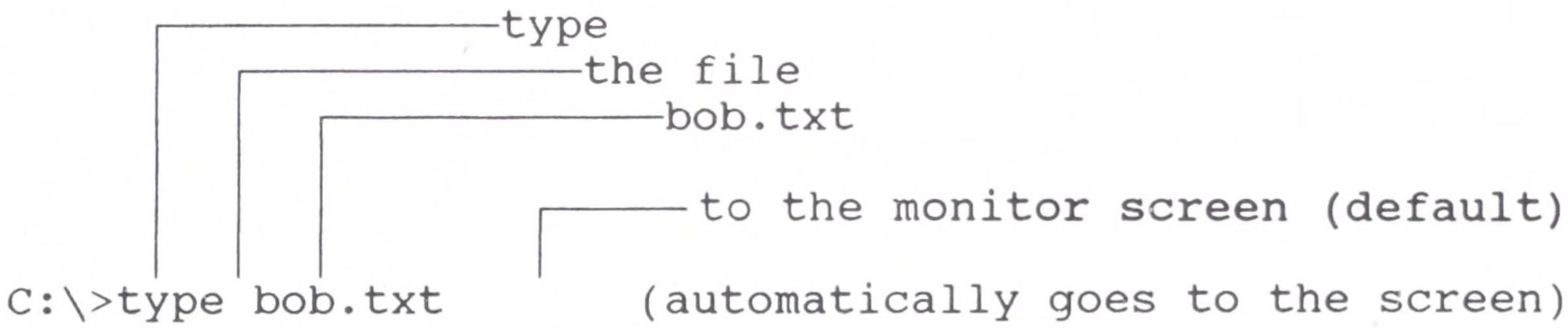


Fig. 14-1 A command statement showing how to TYPE a file.

Using the type command

TYPE out the contents of the BOB.TXT file you created:

```
C:\>type bob.txt <enter>
My name is Bob.
The end of this file.

C:\>
```

Look into the other ASCII files you created:

```
C:\>type mary.grl <enter>
Hello, my name is Mary.
The end.

C:\>

C:\>type sue.grl <enter>
My name is Sue.
End of file.

C:\>

C:  >type john.doc <enter>
This is John's file.
The end of this file.

C:\>
```

As you now know, using the TYPE command by itself will send the contents of a file to the monitor screen. If you want to send the file data to a printer you simply add >PRN to the command statement.

If you have a printer, be sure it is on-line (ready to accept data) and has paper inserted. If you don't have a printer, skip the following printer exercise.

TYPE file data to the printer instead of the monitor screen:

```
C:\>type bob.txt  >prn <enter>
C:\>
```

You just sent the file data to the printer instead of the screen.

Try it now without the >PRN and see what happens:

```
C:\>type bob.txt <enter>
My name is Bob.
The end of this file.
C:\>
```

The file data goes to the monitor screen as before.

Let's send the contents of another ASCII file to the printer:

```
C:\>type mary.grl  >prn <enter>
C:\>
```

Now the data in the file MARY.GRL has been printed.

List the files in the ROOT directory:

```
C:\>dir <enter>
      Volume in drive C has no label
      Directory of C:\

COMMAND   COM    # of bytes <date> <time>
BOB       TXT    41
JOHN      DOC    45
SUE       GRL    31
MARY      GRL    35
xxxxxxxx  xxx    (other existing files, if any)
    xx    File(s)        xxxxxx bytes free
C:\>
```

You can use the >prn to send other information, like the file listing above, to your printer.

Send a listing of the \ROOT directory to your printer:

```
C:\>dir >prn <enter>
C:\>
```

Now you have a \ROOT directory listing on your printer also.

The MORE filter is used with the TYPE command to display a long file one screen at a time. The word -- more --, which is located at the bottom of the screen,

indicates that there is more of the file to be displayed. Hit a key when you want to see it.

Let's make a file 30 lines in length:

C:\ >**copy con test.tmp** <enter>
LINE 1 <enter>
2 <enter>
3 <enter>
4 <enter>
5 <enter>
6 <enter>
7 <enter>
8 <enter>
9 <enter>
10 <enter>
11 <enter>
12 <enter>
13 <enter>
14 <enter>
15 <enter>
16 <enter>
17 <enter>
18 <enter>
19 <enter>
20 <enter>
21 <enter>
22 <enter>
LINE 23 <enter>
24 <enter>
25 <enter>
26 <enter>
27 <enter>
28 <enter>
29 <enter>
30 end of file <enter>
^Z <enter> (***Note:*** Push the F6 function key to get ^Z to end the file then hit the Enter key.)

1 file(s) copied

C:\ >

Let's TYPE out the TEST.TMP file:

C:\ >**type test.tmp** <enter>

8
9
10
11
12
13
14
15

```
16
17
18
19
20
21
22
LINE 23
24
25
26
27
28
29
30 end of file
C:\>
```

You can see above, the beginning of the file has scrolled by. Now try the TYPE command with the MORE filter (The ¦ symbol can be found on the same key as the backslash.):

```
C:\>type test.tmp ¦ more <enter>
LINE 1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
LINE 23
-- more --
```

Using the MORE filter enables you to see the first screen of the file, and the -- more -- shown at the bottom of the screen indicates there is more of the file to be displayed. Simply hit a key now to see the rest of the file.

```
10
11
12
13
14
15
16
17
18
19
20
21
22
LINE 23
-- more --
24
25
26
27
28
29
30 end of file
C:\>
```

Now you can access data in an ASCII file and send it to the printer. You can also use the MORE filter to modify the output of the type command so that you can read a long ASCII file one screen at a time.

CHAPTER 15

The DELETE command

IF YOU COULDN'T delete files from your computer system, they would pile up until finding a file would be like looking for a needle in a haystack. Delete a file when you no longer need it, or if you need to make room for other files on a floppy diskette or hard disk.

What you should already know

- Type the letters shown in **boldface** type.
- The symbol <enter> means press the Enter key.
- A file name consists of 1 to 8 characters on the left side of the period and the file extension consists of from 0 to 3 characters on the right side of the period (p. 44).
- The TYPE command enables you to list the contents of a text file (p. 77).
- The COPY CON command means COPY from CONsole (p. 73).

The command: DEL (remove a file)

Using the DEL command

First, let's make a file so we have something to delete:

C:\>**copy con oldshoes.tmp** <enter>
This is a temporary file <enter>
which will be deleted.
Z^ <enter> (hit the F6 function key for Z^ to end the file)

1 File(s) copied

C:\>

This is so much fun, let's make a couple more files:

C:\>**copy con dirtysox.tmp** <enter>
Dirtysox.tmp is also a <enter>
temporary file. <enter>
Z^ <enter> (hit the F6 function key for Z^ to end the file)

1 File(s) copied

C:\>

C:\>**copy con crazybug.tmp** <enter>
A temporary file of bugs <enter>
Z^ <enter> (hit the F6 function key for Z^ to end the file)

1 File(s) copied

C:\>

Now we have three files to delete. We gave these files the extension of .TMP to denote that they are temporary files, but remember that you can delete any file with any name and extension.

It's time to check the directory for our new files!

C:\>**dir** <enter>

```
COMMAND     COM   # of bytes <date> <time>
BOB         TXT   41
JOHN        DOC   45
SUE         GRL   31
MARY        GRL   35
OLDSHOES    TMP   50   (new file)
DIRTYSOX    TMP   42   (new file)
CRAZYBUG    TMP   27   (new file)
xxxxxxxx    xxx   (other existing files)
    xx      File(s)        xxxxxx bytes free
```

C:\>

It looks like the three new files are there.

I don't know who was using the OLDSHOES so let's get rid of them:

C:\>**del oldshoes.tmp** <enter>

C:\>

The only way you can be sure the file was deleted is to use DIR:

```
C:\>dir <enter>

COMMAND   COM   # of bytes   <date> <time>
BOB       TXT   41
JOHN      DOC   45
SUE       GRL   31
MARY      GRL   35
DIRTYSOX  TMP   42   (new file)
CRAZYBUG  TMP   27   (new file)
xxxxxxxx  xxx   (other existing files)
      xx  File(s)        xxxxxx bytes free

C:\>
```

As you can see above, oldshoes.tmp is gone (deleted).

Now, we will say goodbye to the DIRTYSOX.TMP:

```
C:\>del dirtysox.tmp <enter>

C:\>
```

A computer is no place for any type of bug so:

```
C:\>del crazybug.tmp <enter>

C:\>
```

How do we know for sure the deleted files are gone?

```
C:\>dir <enter>   (check the current directory)

COMMAND   COM   # of bytes   <date> <time>
BOB       TXT   41
JOHN      DOC   45
SUE       GRL   31
MARY      GRL   35
xxxxxxxx  xxx   (other existing files)
      xx  File(s)        xxxxxx bytes free

C:\>
```

Nice job! You now know how to delete files.

CHAPTER 16

Make directories

BEING ABLE to make directories is so important that I have included many examples and practice sessions. Understanding the directory concept is not the easiest thing to do, therefore, to prevent you from getting frustrated I have included some illustrations in this chapter.

What a directory is

A directory is an area of a hard disk or diskette which has a name and is used to separate related files. Every disk and diskette will have a \ROOT directory, which is created by DOS. All directories you create will be in the \ROOT directory. Even though directories created in the \ROOT directory are subdirectories of the \ROOT directory, they are referred to as directories. A subdirectory is a directory that is in any directory other than the \ROOT directory (p. 45).

The \ROOT directory is created when the disk is formatted using DOS. Assuming the hard disk in Fig. 16-1 is a 20 megabyte disk, the \ROOT directory would have a capacity of 20 megabytes.

The number of free megabytes in the \ROOT directory will decrease in proportion to the number of megabytes consumed by files copied to the hard disk.

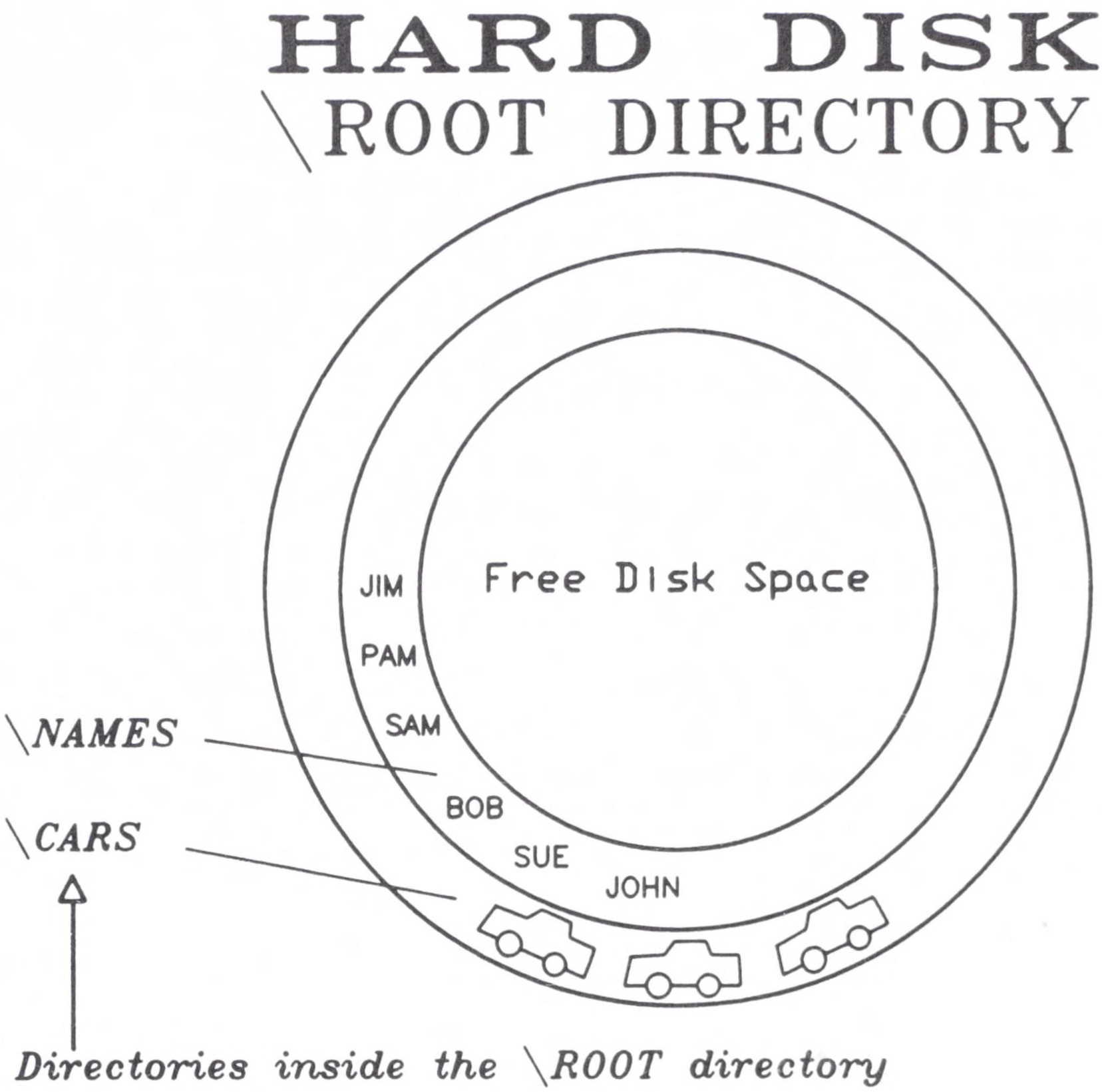


Fig. 16-1 A hard disk from inside a hard drive.

In Fig. 16-1, try to visualize the \NAMES directory expanding into the free disk space as more and more files are added to the \NAMES directory. Also, if you add files to the \CARS directory, it will expand into the free disk space.

In Fig. 16-2, you can see how the \ROOT directory is the starting point for all other directories and subdirectories. The directories in the first column to the right of the \ROOT directory starting with \DOS are considered directories, and not subdirectories, of the \ROOT directory. All other directories are subdirectories of a previous directory.

Figure 16-3 will help you understand how the hard disk space is occupied with data. The glass on the left shows an empty \ROOT directory with a capacity of 20 megabytes. The glass in the center shows a \DOS directory containing one megabyte of files leaving 19 megabytes of free space. The glass on the right contains two directories, the \DOS and the \LOTUS123 directories. Now what happens if you add one megabyte of files to the \DOS directory in this glass? The \DOS directory would expand to accept the new files using one megabyte of the 17 Mb of free space.

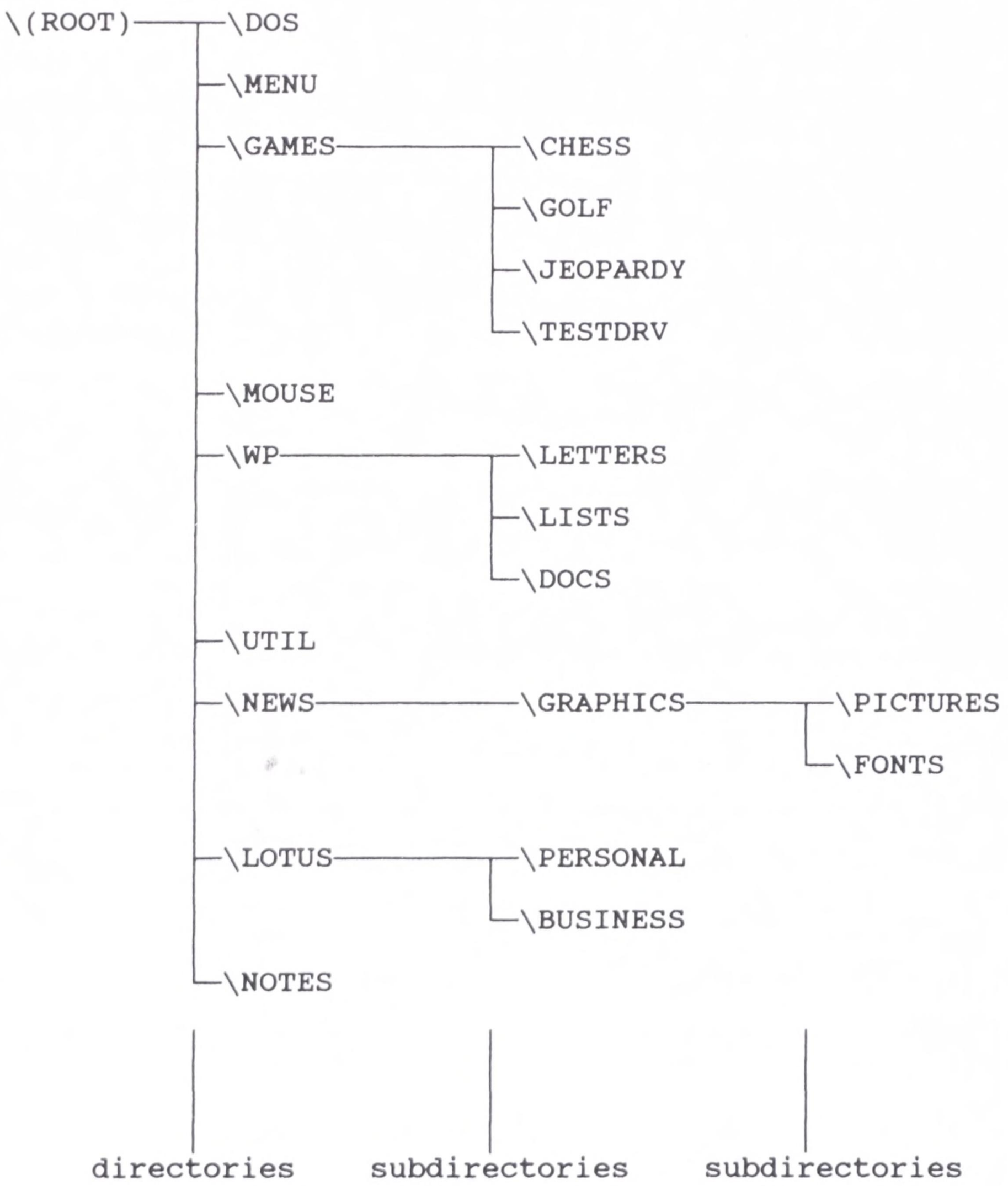


Fig. 16-2 A directory map showing the directory structure of a hard drive C:.

Figure 16-4 shows the directory structure of a hard disk or diskette. The entire book shelf is the \ROOT directory. The loose files on the top shelf are in the \ROOT directory and not in any other directory. You also see four other directories inside the \ROOT directory: \NAMES, \PEOPLE, \BOOKS, and \TOYS. These four directories also contain files like the loose ones on the top shelf. It's plain to see just how well a proper directory structure can organize your hard disk.

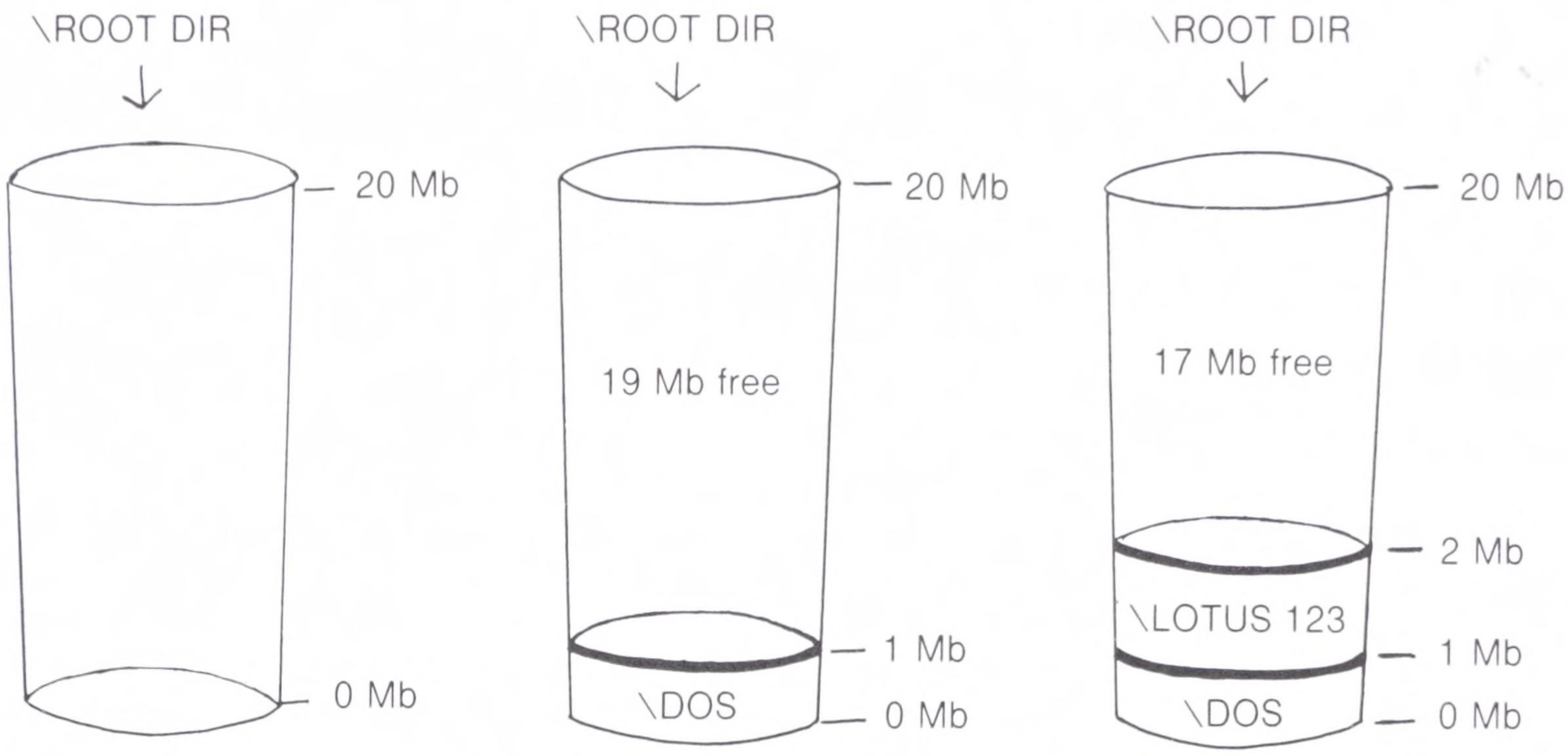


Fig. 16-3 Drinking glasses demonstrate how directories expand within the \ROOT directory.

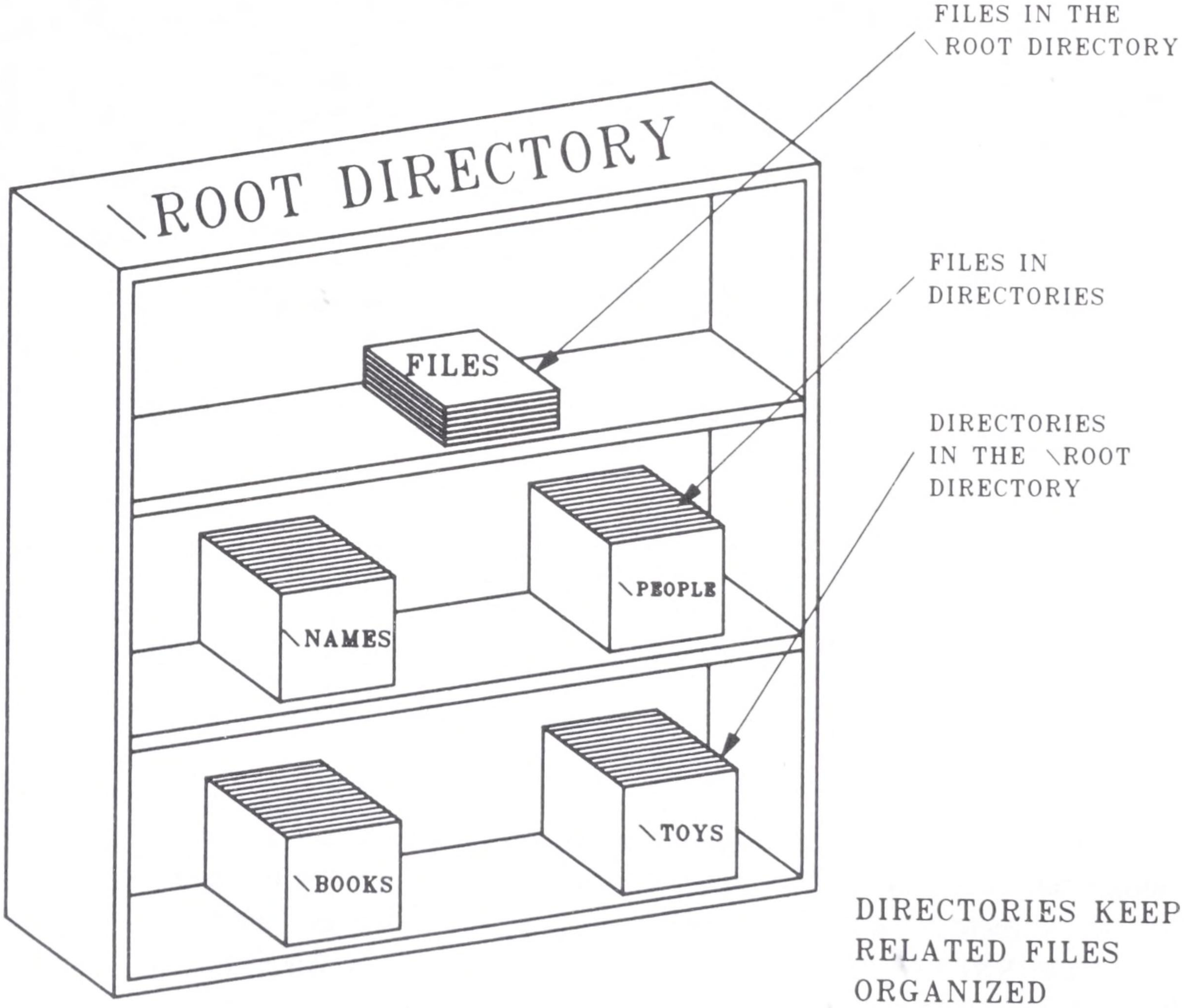


Fig. 16-4 A bookcase illustrating files and directories in the \ROOT directory.

The grocery store in Fig. 16-5 compares to the \ROOT directory because it contains all types of food, just like the \ROOT directory contains all types of files. Putting all your files in the \ROOT directory would be like throwing all the food in the grocery store on the floor. If you wanted to find an orange, you would have to dig through all the other food until you found it. The counters in the grocery store are like the directories in the \ROOT directory. They keep every related item together and separated from other unrelated items.

Fig. 16-5 A grocery store shows how we see the directory structure used in our normal daily lives.

What you should already know

- Type the letters shown in **boldface** type.
- The symbol <enter> means press the Enter key.
- When you COPY a file you make a duplicate (p. 109).
- Use only the backslash \ to show a directory (p. 46).
- The backslash \ is located to the left of the Backspace key (p. 46).
- The forward slash / (located on the ? key) can *never* be used to indicate a directory, but it is used with commands to *switch* different parameters (p. 46).

The command: MD (Make Directory)

Making directories

First, make a directory called \NAMES:

C:\>**md\names** <enter> (The \ is used to designate a directory)

C:\>

Note: If you get the error message Unable to create directory, it is probably because one with the same name already exists or you made a typing error. Try retyping the command.

Use the DIR command to check for the \NAMES directory:

C:\>**dir** <enter>

```
     Volume of drive C has no label
     Directory of C:\ (\ROOT directory)

COMMAND   COM   # of bytes   <date> <time>
BOB       TXT
JOHN      DOC
SUE       GRL
MARY      GRL
NAMES     <DIR>   (you just made this directory)
          6 file(s)   # of bytes free

C:\>
```

You have created the directory called \NAMES. You can see it listed and know it is a directory and not a file because of the symbol <DIR>.

In Fig. 16-6 the spaces in the command statement can be assigned words to help you remember what is going where. The command statement in Fig. 16-6 reads: copy the file BOB.TXT to the \NAMES directory.

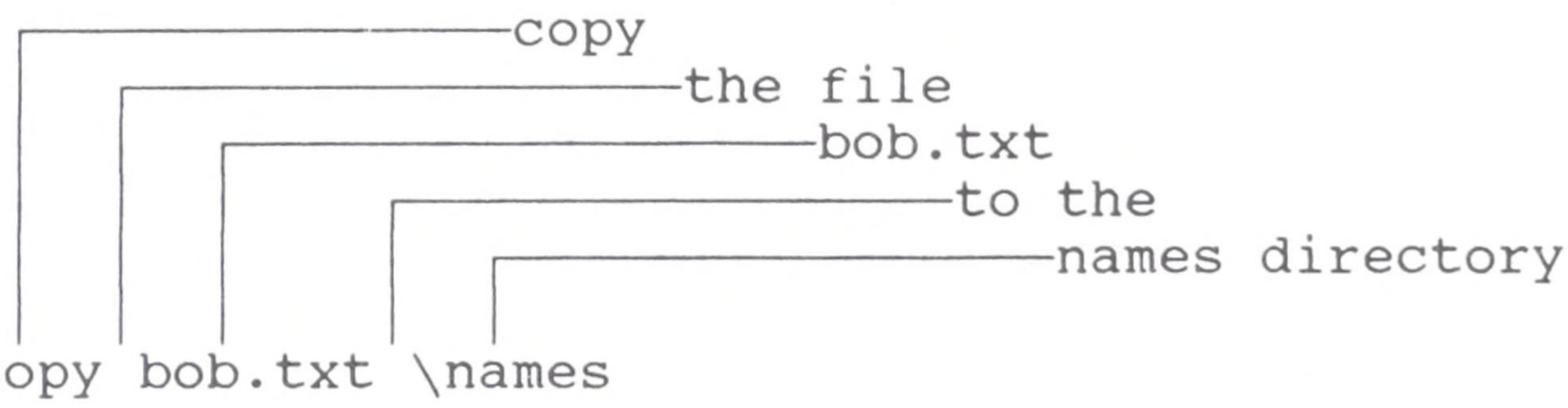


Fig. 16-6 A command statement showing the direction for copying a file into a directory.

Let's copy the file BOB.TXT to the \NAMES directory.

C:\>**copy bob.txt \names** <enter>

```
      1 file(s) copied

C:\>
```

Let's look in the \NAMES directory for the file BOB.TXT.

```
C:\>dir \names <enter>
        Volume in drive C has no label
        Directory of C:\NAMES    (the \NAMES directory)

.
..
BOB      TXT
      3 file(s)    # of bytes

C:\>
```

As you can see, there is a duplicate of the file BOB.TXT in the directory, \NAMES.

Remember, when the computer sees the backslash \ in front of the word NAMES, it knows you mean the directory \NAMES. If you forget the backslash \and just typed NAMES, then the computer would assume you had a file called NAMES and not a directory.

Now copy more files into the \NAMES directory:

```
C:\>copy john.doc \names <enter>
      1 file(s) copied
C:\>copy sue.grl \names <enter>
      1 file(s) copied
C:\>copy mary.grl \names <enter>
      1 file(s) copied
```

Let's take another look in the \NAMES directory. Use the DIR command followed by the directory name:

```
C:\>dir \names <enter>
        Volume in drive C has no label
        Directory of C:\NAMES    (the \NAMES directory)
            <DIR>    # of bytes    <date> <time>
            <DIR>
..
BOB       TXT
JOHN      DOC
SUE       GRL
MARY      GRL
             6 file(s)    # of bytes free

C:\>
```

It looks like they are all there.

Make another directory called \PEOPLE:

```
C:\>md\people <enter>
C:\>
```

Use the DIR command to be sure the \PEOPLE directory was created:

```
C:\>dir <enter>
```

```
    Volume in drive C has no label
    Directory of C:\   (\ROOT directory)
COMMAND   COM   # of bytes   <date> <time>
BOB       TXT
JOHN      DOC
SUE       GRL
MARY      GRL
NAMES     <DIR>
PEOPLE    <DIR>    (you just made this directory)
              7 file(s)   # of bytes free

C:\>
```

It looks like you did it again. Wonderful.

Now look in the \NAMES directory while in the \ROOT directory.

```
C:\>dir \names <enter>
    Volume in drive C has no label
    Directory of C:\NAMES   (the \NAMES directory)
.         <DIR>   # of bytes   <date> <time>
..        <DIR>
BOB       TXT
JOHN      DOC
SUE       GRL
MARY      GRL
              6 file(s)   # of bytes free

C:\>
```

Look in the \PEOPLE directory while in the \ROOT directory.

```
C:\>dir \people <enter>

    Volume in drive C has no label
    Directory of C:\PEOPLE   (the \PEOPLE directory)
.         # of bytes   <date> <time>
..
    2 file(s)

C:\>
```

As you can see, the \PEOPLE directory is empty. The dots represent the directory creation data. All directories and subdirectories have these dots except the \ROOT directory.

Copy the files SUE.GRL and MARY.GRL into the \PEOPLE directory.

```
C:\>copy sue.grl \people <enter>
    1 file(s) copied

C:\>copy mary.grl \people <enter>
    1 file(s) copied

C:\>
```

Now let's look into the \PEOPLE directory.

```
C:\>dir \people <enter>

     Volume in drive C has no label
     Directory of C:\people    (the \PEOPLE directory)
.    # of bytes <date> <time>
..
SUE      GRL
MARY     GRL
        4 file(s)    # of bytes free

C:\>
```

Now you have copies of SUE.GRL and MARY.GRL in the \ROOT directory, the \PEOPLE directory, and the \NAMES directory.

Now, just for the fun of it, look into the \NAMES directory again:

```
C:\>dir \names <enter>

     Volume in drive C has no label
     Directory of C:\NAMES    (the \NAMES directory)
.       <DIR>    # of bytes    <date> <time>
..      <DIR>
BOB     TXT
JOHN    DOC
SUE     GRL
MARY    GRL
       6 file(s)    # of bytes free

C:\>
```

The \ROOT directory (\) is the main directory of the hard drive. If you get lost in the directory structure, you can always get back to the \ROOT directory by typing:

```
cd \<enter>
```

Now that you know how to make directories, you need to know how to change directories. When you change directories you make another directory the current directory. The next chapter shows you how to change directories.

CHAPTER 17

Change directories

MOVING FROM one directory to another is easy to do and can save you time and effort when using other commands.

Why change directories

You change directories when you want to make a different directory the current directory. Usually it is easier to accomplish certain tasks when you are in the directory of which you are working. Being in a directory also allows you to use commands with their defaults.

What you should already know

- Type the letters shown in **boldface** type.
- The symbol <enter> means press the enter key.
- A directory is an area on a disk that holds related files separate from other files (p. 87).
- You use the MD command to make directories (p. 92).
- Use only the backslash \ to indicate a directory (p. 46).
- The PROMPT PG command shows the current directory in the prompt (p. 45).

The Command: CD (Change Directory)

Changing directories

Changing directories is the process of leaving one area of a disk and entering another. The big advantage is that you can use commands without the need to enter the drive letter and path for the current directory.

Now let's go to the \NAMES directory:

```
C:\>cd\names <enter>
C:\NAMES>
```

Note: When we changed from the \ROOT directory to the \NAMES directory, the word NAMES appeared in the C> prompt (C:\NAMES>). Now \NAMES is the current directory.

The DIR command will show what is in the \NAMES directory.

```
C:\NAMES>dir <enter>

     Volume in drive C has no label
     Directory of C:\NAMES    (the \NAMES directory)
.         <DIR>    # of bytes   <date>   <time>
..        <DIR>
BOB       TXT
JOHN      DOC
SUE       GRL
MARY      GRL
          6 file(s)    # of bytes free

C:\NAMES>
```

Let's change to the \ROOT directory now:

```
C:\NAMES>cd\ <enter>
C:\>
```

The backslash \ in the prompt indicates the \ROOT directory is now current.

Now let's see what is in the \ROOT directory:

```
C:\>dir <enter>
     Volume in drive C has no label
     Directory of C:\    (the \ROOT directory)
COMMAND   COM    # of bytes   <date>   <time>
BOB       TXT
JOHN      DOC
SUE       GRL
MARY      GRL
NAMES     <DIR>
PEOPLE    <DIR>
          7 file(s)    # of bytes free

C:\>
```

The \ROOT directory above contains five files and two directories.

When you change to another directory, it's good practice to always use the DIR command to list the contents.

Now, let's change back to the \NAMES directory:

```
C:\>cd\names <enter>
C:\NAMES>
```

Change to the \PEOPLE directory without first going to the \ROOT directory:

```
C:\NAMES>cd\people <enter>
C:\PEOPLE>
```

Now the \PEOPLE directory is the current directory.

Check to see what's in the \PEOPLE directory:

```
C:\PEOPLE>dir <enter>
      Volume in drive C has no label
      Directory of C:\people    (the \PEOPLE directory)
.                    # of bytes   <date>   <time>
..
SUE      GRL
MARY     GRL
        4 file(s)    # of bytes free
C:\PEOPLE>
```

Because \PEOPLE is the current directory, you only need to type DIR to list the files.

Go back to the \ROOT directory:

```
C:\PEOPLE>cd\   <enter>
C:\>
```

I think it is time we make a couple new directories:

```
C:\>md\toys   <enter>
C:\>
C:\>md\books   <enter>
C:\>
```

There's only one way to know if the new directories exist:

```
C:\>dir   <enter>
      Volume of drive C has no label
      Directory of C:\    (the \ROOT directory)
COMMAND   COM    # of bytes   <date>   <time>
BOB       TXT
JOHN      DOC
SUE       GRL
MARY      GRL
```

```
NAMES      <DIR>
PEOPLE     <DIR>
TOYS       <DIR>    (new directory)
BOOKS      <DIR>    (new directory)
           9 file(s)   # of bytes free

C:\>
```

Now you are absolutely sure the new directories exist.

Change to the \BOOKS directory:

C:\>**cd\books** <enter>

C:\BOOKS>

Now change to the \TOYS directory:

C:\BOOKS>**cd\toys** <enter>

C:\TOYS>

Now change to the \PEOPLE directory:

C:\TOYS>**cd\people** <enter>
C:\PEOPLE>

Now change to the \NAMES directory:

C:\PEOPLE>**cd\names** <enter>
C:\NAMES>

Now change to the \ROOT directory:

C:\NAMES>**cd** <enter>
C:\>

Remember, the \(backslash) by itself means the \ROOT directory.

Let's see what's in the \TOYS directory.

C:\ >**dir \toys** <enter>
Volume of drive C has no label
Directory of C:\TOYS (the \TOYS directory)

```
.                    # of bytes   <date>   <time>
..
     2 file(s)           # of bytes free
```

C:\>

We used the command statement DIR \TOYS to list the files in the \TOYS directory without leaving the \ROOT directory.

Change to the \TOYS directory:

C:\>**cd/toys** <enter>

C:\TOYS>

Now the \TOYS directory is current.

List the files in the \TOYS directory:

```
C:\TOYS>dir <enter>
      Volume of drive C has no label
      Directory of C:\TOYS    (the \TOYS directory)
.                          # of bytes   <date>   <time>
..
      2 file(s)            # of bytes free
C:\TOYS>
```

As you can see, if you are in the \TOYS directory all you need to do is type DIR to list the files.

Look in another directory from the \TOYS directory:

```
C:\TOYS>dir \books <enter>
      Volume in drive C has no label
      Directory of C:\BOOKS    (the \BOOKS directory)
.                          # of bytes   <date>   <time>
..
      2 file(s)    # bytes free
C:\TOYS>
```

You're still in the \TOYS directory and listed the files in the \BOOKS directory.

Now change to the \BOOKS directory:

```
C:\TOYS>cd\books <enter>
C:\BOOKS>
```

Because you're in the \BOOKS directory, just type DIR:

```
C:  BOOKS>dir <enter>
      Volume in drive C has no label
      Directory of C:  BOOKS    (the   BOOKS directory)
.                          # of bytes   <date>   <time>
..
      2 file(s)    # of bytes free
C:\BOOKS>
```

Now do a listing of the files in the \NAMES directory:

```
C:\BOOKS>dir \NAMES <enter>
      Volume in drive C has no label
      Directory of C:\NAMES    (the \NAMES directory)
.       <DIR>    # of bytes   <date>   <time>
..      <DIR>
BOB     TXT
JOHN    DOC
SUE     GRL
MARY    GRL
      6 file(s)    # of bytes free
C:\BOOKS>
```

Put a floppy disk with software on it in drive A:

```
C:\BOOKS>dir A:\ <enter>
     Volume in drive A has no label
     Directory of A:\   (the \ROOT directory of A:)
List of files   # of bytes   <date>   <time>
     # of file(s)   # bytes free

C:\BOOKS>
```

You have just listed the files on the floppy disk of drive A: without leaving the \BOOKS directory on drive C:.

This is a good time to make a file in the \TOYS directory:

```
C:\>cd\toys <enter>

C:\TOYS>

C:\TOYS>copy con firebird.car <enter>
The firebird is a sports car. <enter>
It is fun to drive. <enter>
The end. <enter>
^Z   (push the F6 key for ^Z to end the file)   <enter>
                1 file(s) copied

C:\TOYS>
```

Look in the \TOYS directory now and see what's there:

```
C:\TOYS>dir <enter>
     Volume of drive C has no label
     Directory of C:\TOYS   (the \TOYS directory)
                          # of bytes   <date>   <time>
.
..
FIREBIRD   CAR
     3 file(s)            # of bytes free

C:\TOYS>
```

You are sure the file is there because you used the DIR command.

This next step might look complicated, but don't chicken out now. COPY the FIREBIRD.CAR file to the \BOOKS directory:

```
C:\TOYS>copy firebird.car \ books <enter>

     1 file(s) copied

C:\TOYS>
```

To see if there really is a copy (duplicate) in the \BOOKS directory, do the following:

```
C:\TOYS>dir \BOOKS <enter>
     Volume of drive C has no label
     Directory of C:  BOOKS   (the \BOOKS directory)
                          # of bytes   <date>   <time>
.
..
```

```
FIREBIRD   CAR   ###
        3 file(s)     # of bytes free
C:\TOYS>
```

It's there all right. Would I steer you wrong? Say no! But something is wrong. We should have a file with the name FIREBIRD.CAR in a \CAR directory, not in a \TOYS or \BOOKS directory. So, let's fix it.

First, make a directory \CARS:

```
C:\TOYS>md\cars <enter>
C:\TOYS>
```

COPY the FIREBIRD.CAR file to the \CARS directory:

```
C:\TOYS>copy firebird.car \CARS <enter>
      1 file(s) copied
C:\TOYS>
```

Before we delete the FIREBIRD.CAR file from the \TOYS directory, it would be a good idea to check the \CARS directory to be sure the FIREBIRD.CAR file was copied. List the files in the \CARS directory:

```
C:\TOYS>dir \cars <enter>
     Volume in drive C has no label
     Directory of C:\CARS    (the \CARS directory)
.                        # of bytes   <date>   <time>
..
FIREBIRD   CAR
     3 file(s)           # of bytes free
C:\TOYS>
```

The FIREBIRD.CAR file is definitely in the \CARS directory so you can now delete the FIREBIRD.CAR file in the \TOYS directory.

Delete the FIREBIRD.CAR from the \TOYS directory:

```
C:\TOYS>del firebird.car <enter>
C:\TOYS>
```

Look in the \TOYS directory to be sure the FIREBIRD.CAR file is gone:

```
C:\TOYS>dir <enter>
     Volume of drive C has no label
     Directory of C:\TOYS    (the \TOYS directory)
.                        # of bytes   <date>   <time>
..
     2 file(s)           # of bytes free
C:\TOYS>
```

It's gone alright. This is easier than you thought. Right?

More practice

Practice makes perfect, so here is some more practice:

C:\TOYS>**cd** <enter>

C:\>**cd\people** <enter>

C:\PEOPLE>**cd\books** <enter>

C:\BOOKS>**cd\names** <enter>

C:\NAMES>**cd\cars** <enter>

C:\CARS>**cd** \<enter>

C:\>**dir** <enter>

```
     Volume in drive C has no label
     Directory of C:\   (the \ROOT directory)
COMMAND   COM    # of bytes   <date>   <time>
BOB       TXT
JOHN      DOC
SUE       GRL
MARY      GRL
NAMES     <DIR>
PEOPLE    <DIR>
TOYS      <DIR>
BOOKS     <DIR>
CARS      <DIR>
          10 file(s)   # of bytes free
```

C:\>

You'll be a professional soon!

CHAPTER 18

Remove directories

THERE ARE TIMES when you will have empty directories because you deleted files to create more disk space. You should remove those empty directories and subdirectories.

Why remove a directory

If you don't remove your unused directories, it will be more difficult to find the directories and files you want when using the DIR command. Remove directories that are no longer useful to maintain an efficient system.

What you should already know

- Type the letters shown in **boldface** type.
- The symbol <enter> means press the Enter key.
- The command MD means make directory (p. 92).
- The command CD means change directory (p. 97).
- The backslash \ is used to indicate a directory (p. 46).
- A subdirectory is a directory inside a directory (p. 45).

The command: RD (Remove Directory)

Make and remove directories

First, make a directory called \BOATS:

C:\>**md\boats** <enter>
C:\>

Now remove the directory \BOATS:

C:\>**rd\boats** <enter>
C:\>

Make a directory called \TREE:

C:\>**md\tree** <enter>
C:\>

Now remove the \TREE directory:

C:\>**rd\tree** <enter>
C:\>

Make a directory called \BIRDS:

C:\>**md\birds** <enter>
C:\>

Now remove it:

C:\>**rd\birds** <enter>
C:\>

Try to remove the \NAMES directory and see what happens:

C:\>**rd\names** <enter>
Invalid path, not directory,
or directory not empty
C:\>

If you get the above message it's because the directory you are trying to remove has a file or a subdirectory in it. You have to delete all the files and remove all the subdirectories from the directory you want to remove.

Note: If you try to remove an *empty* directory and get the error message, it is likely that there is a hidden file in the directory that will not show up with the DIR command. You cannot remove that directory no matter what you do unless you clear the file(s) attributes. Don't worry about it now. I am telling you about it so that you don't go crazy wondering why you can't remove a particular directory.

Make and remove subdirectories

Let's make three directories and subdirectories:

C:\>**md\veggies** <enter>

C:\>**md\veggies\carrots** <enter>

C:\>**md\veggies\celery** <enter>

Now look in the \VEGGIES directory:

C:\>**dir \veggies** <enter>

```
 Volume of drive C has no label
 Directory of C:\VEGGIES    (the \VEGGIES directory)
.                    # of bytes   <date>   <time>
..
CARROTS    <DIR>     (the \CARROTS subdirectory)
CELERY     <DIR>     (the \CELERY subdirectory)
           4 file(s)     # of bytes free

C:\>
```

The DIR command shows that the \VEGGIES directory has two subdirectories \VEGGIES\CARROTS and \VEGGIES\CELERY.

Remove the three directories. Try to remove the \VEGGIES directory first:

C:\>**rd\veggies** <enter>

```
Invalid path, not directory,
or directory not empty

C:\>
```

This error message occurred because there are two subdirectories in the \VEGGIES directory. You must completely empty the \VEGGIES directory of files and subdirectories before you can remove it.

Remove the subdirectories with these commands:

C:\>**rd veggies\carrots** <enter>

C:\>**rd veggies\celery** <enter>

Now remove the \VEGGIES directory.

C:\>**rd\veggies** <enter>

C:\>

You have just removed all three directories and subdirectories.

Note: If you have the prompt C:\VEGGIES>, you cannot remove the \VEGGIES directory because it is the current directory. Use the command CD\ to change to the \ROOT directory and then use the command RD\VEGGIES to remove the \VEGGIES directory.

Check to be sure the \VEGGIES directory is gone:

C:\>**dir** <enter>

```
     Volume in drive C has no label
     Directory of C:\   (the \ROOT directory)
COMMAND   COM    # of bytes   <date>   <time>
BOB       TXT
JOHN      DOC
SUE       GRL
MARY      GRL
NAMES     <DIR>
PEOPLE    <DIR>
TOYS      <DIR>
BOOKS     <DIR>
CARS      <DIR>
            10 file(s)   # of bytes free

C:\>
```

As you can see above, there is no \VEGGIES directory.

CHAPTER 19

Copy a file

IT'S INEVITABLE that you will need to copy files, even if it's only from your word processor to a floppy diskette. Some word processors like WordPerfect give you the ability to copy files while in the word processor's directory. This chapter will teach you how to COPY any file to any drive or directory.

Why copy a file?

You copy a file when you want to place a duplicate file on a floppy diskette, hard drive, or in another directory.

What you should already know

- Type the letters shown in **boldface** type.
- The COPY CON command means COPY from CONsole (p. 73).
- ASCII, data, and program, are the three basic types of files (p. 71).
- The PROMPT command will show the current directory (p. 68).
- The asterisk is called a wildcard and is used to take the place of some or all characters in a file name. For example, *.* means all file names (p. 45).

- The MD command means make directory (p. 92).
- The CD command means change directory (p. 97).
- The RD command means remove directory (p. 105).

The command: COPY

The command statement in Fig. 19-1 reads: copy the file JOHN.DOC to the \PEOPLE directory. This statement will help you to remember the proper sequence of file and directory.

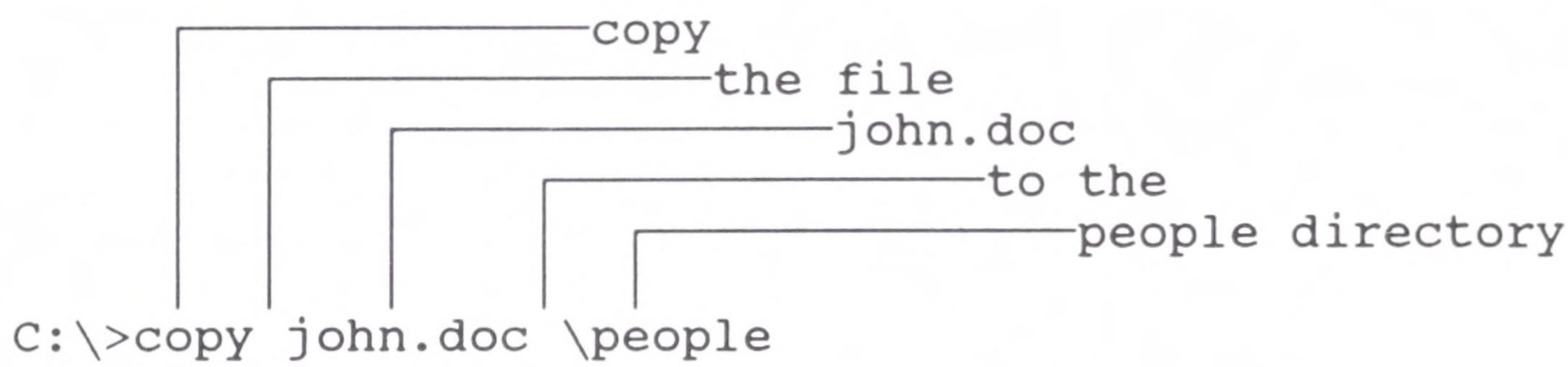


Fig. 19-1 A description of the COPY command.

Use the PROMPT command to show the current directory:

C>**prompt pg** <enter>

C:\> (the backslash \ shows you are in the \ROOT directory.

How to copy files

Copying files is easy once you become used to the way the command statements are written.

Let's begin by copying the JOHN.DOC file to the \PEOPLE directory:

C:\>**copy john.doc \people** <enter>
1 file(s) copied

C:\>

Use the DIR command to look into the \PEOPLE directory:

C:\>**dir \people** <enter>

Volume in drive C has no label
Directory of C:\people (the \PEOPLE directory)

		# of bytes	<date>	<time>
.				
..				
SUE	GRL			
MARY	GRL			
JOHN	DOC	(you just copied this file from the \ROOT)		

5 file(s) # of bytes free

C:\>

Now COPY BOB.TXT into the \PEOPLE directory.

```
C:\>copy bob.txt \people <enter>
        1 file(s) copied

C:\>
```

Check the \PEOPLE directory for the BOB.TXT file:

```
C:\>dir \people <enter>

     Volume in drive C has no label
     Directory of C:\people    (the \PEOPLE directory)
.                  # of bytes   <date>   <time>
..
SUE     GRL
MARY    GRL
JOHN    DOC
BOB     TXT    (the file you copied)
        6 file(s)    # of bytes free

C:\>
```

Change to the \PEOPLE directory:

```
C:\>cd \people <enter>
C:\PEOPLE>    (notice the \PEOPLE in the prompt)
```

Now let's delete all the girls from the \PEOPLE directory:

```
C:\PEOPLE>del *.grl <enter>
C:\PEOPLE>
```

List the files in the \PEOPLE directory and look for the girls:

```
C:\PEOPLE>dir <enter>

     Volume in drive C has no label
     Directory of C:\people    (the \PEOPLE directory)
.                  # of bytes   <date>   <time>
..
JOHN    DOC
BOB     TXT
        4 file(s)    # of bytes free

C:\PEOPLE>
```

As you can see, we have deleted the two files that had the extension GRL. If you remember, the asterisk on the left side of the period takes the place of any or all eight characters on the left side of the period. Therefore, the computer searched for all the files with GRL extension and deleted them.

Copy the girls from the \ROOT back into the \PEOPLE directory:

```
C:\PEOPLE>copy \ *.grl <enter>

     2 file(s) copied

C:\PEOPLE>
```

Let's see if the *.GRL files are there using the DIR command:

```
C:\PEOPLE>dir <enter>

     Volume in drive C has no label
     Directory of C:\people    (the \PEOPLE directory)
.                  # of bytes   <date>   <time>
..
SUE      GRL   (first file copied)
MARY     GRL   (second file copied)
JOHN     DOC
BOB      TXT
        6 file(s)    # of bytes free

C:\PEOPLE>
```

Make a new file called 1$BY%__3$.&Z! in the \PEOPLE directory:

```
C:\PEOPLE>copy con 1$by%__3$.&z! <enter>
This is a very difficult name to type. <enter>
It would be nice if there was an easy way to <enter>
copy and/or delete it. <enter>
^Z   (push the F6 key for the ^Z)

     1 file(s) copied

C:  PEOPLE>
```

Check the \PEOPLE directory to be sure the file was created:

```
C:\PEOPLE>dir <enter>

     Volume in drive C has no label
     Directory of C:\people    (the \PEOPLE directory)
.      # of bytes   <date>   <time>
..
SUE      GRL
MARY     GRL
JOHN     DOC
BOB      TXT
1$by%__3$   &z!   (the file you made)
       7 file(s)    # of bytes free

C:  PEOPLE
```

It would be drudgery to type that nasty file name again, so let's copy it to the \ROOT directory the easy way:

```
C:\PEOPLE>copy 1*.*\  <enter>

     1 file(s) copied

C:\PEOPLE
```

The command statement above will COPY all the files in the \PEOPLE directory with a number 1 as the first file name character to the \ROOT directory. Because you have only one file with the number 1 as the first file name character, you have only copied one file.

Now, check the \ROOT directory to see if it is there:

```
C:\PEOPLE>dir \ <enter>
     Volume in drive C has no label
     Directory of C:\    (the \ROOT directory)
COMMAND   COM   # of bytes   <date>   <time>
BOB       TXT
JOHN      DOC
SUE       GRL
MARY      GRL
NAMES     <DIR>
PEOPLE    <DIR>
TOYS      <DIR>
BOOKS     <DIR>
CARS      <DIR>
1$by%__3$   &z!    (here it is)
       11 file(s)   # of bytes free

C:\PEOPLE>
```

It's there all right. Now you have it in two directories, and you want to get rid of both of them.

Deleting files using a wildcard (*.*) can turn into a nightmare. To reduce the chance of accidentally deleting a group of files you don't want to delete, follow the method prescribed below when using wildcards (*.*).

First, use the DIR command with the wildcards to list the group of files you want to delete:

```
C:\PEOPLE>dir 1*.* <enter>

     Volume in drive C has no label
     Directory of C:\people    (the \PEOPLE directory)
1$   by%__3$   &z!    (the file(s) you want to delete)
                  1 file(s)   # of bytes free

C:\PEOPLE
```

You can see in the listing the group of files you will be deleting.

Now use the DEL command to delete the group of files:

```
C:\PEOPLE>del 1*.* <enter>

C:\PEOPLE>
```

Use the DIR command to be sure the file(s) are gone:

```
C:\PEOPLE>dir <enter>

     Volume in drive C has no label
     Directory of C:\people    (the \PEOPLE directory)
.                  # of bytes   <date>   <time>
..
SUE      GRL
MARY     GRL
JOHN     DOC
```

```
BOB     TXT
        6 file(s)   # of bytes free

C:\PEOPLE>
```

They're gone!

Now let's get rid of that nasty file that's in the \ROOT directory. Change to the \ROOT directory:

```
C:\PEOPLE>cd \<enter>

C:\>
```

Now list the files to delete in the \ROOT directory:

```
C:  >dir 1*.* <enter>

     Volume in drive C has no label
     Directory of C:     (the \ROOT directory)
1$   by%__3$     $z!    (here it is)
                  1 file(s)   # of bytes free

C:\>
```

If you are satisfied with the listing, delete the file(s):

```
C:\>del 1*.* <enter>

C:\>
```

List the files in the \ROOT directory to be sure it is gone.

```
C:\>dir <enter>

     Volume in drive C has no label
     Directory of C:\    (the \ROOT directory)
COMMAND   COM   # of bytes   <date>   <time>
BOB         TXT
JOHN        DOC
SUE         GRL
MARY        GRL
NAMES     <DIR>
PEOPLE    <DIR>
TOYS      <DIR>
BOOKS     <DIR>
CARS      <DIR>
        10 file(s)   # of bytes free

C:\>
```

It's gone!

Copying a file from diskette to diskette

DOS will let you use the COPY command to COPY a file from a diskette in drive A: to another diskette even though you only have one floppy drive. You probably won't use this very often, so the following exercise is optional.

Insert a diskette that has a file on it and go to drive A:

```
C:\>a: <enter>
A:\>
```

Enter the following command statement:

```
A:\>copy *.* b: <enter>
```

You will get the following message:

```
Insert diskette for drive B: and strike
any key when ready
```

Remove the diskette from drive A: and insert a formatted blank diskette in the same floppy drive. Hit the Enter key, and the files from the first diskette will be copied to the formatted blank diskette. Then you will get the following message:

```
Insert diskette for drive A: and strike
any key when ready
```

Put the original diskette back into drive A:. Hit the Enter key again, and you will be back to the A> prompt if the copy is complete. Otherwise, you might have to repeat the previous steps until you get:

```
A>
```

CHAPTER 20

The PATH command

THE PATH COMMAND can save you a lot of time and work by eliminating the need to type the full path to the program files you want to execute. A *path* in a computer is a course or route that the computer follows when it is looking for an executable file.

What you should already know

- Type the letters shown in **boldface** type.
- A directory is an area on a disk used to separate a group of related files from unrelated files (p. 87).
- DOS program files are located in the \DOS directory (p. 52).
- The \ROOT directory is the starting point for all other directories and is designated by the backslash \ (p. 43).
- You must FORMAT new floppy diskettes before they can be used (p. 123).

The command: PATH

How the PATH command works

Enter a PATH as shown in Fig. 20-1 at the prompt:

```
C:\>path c:\;c:\dos <enter>
C:\>
```

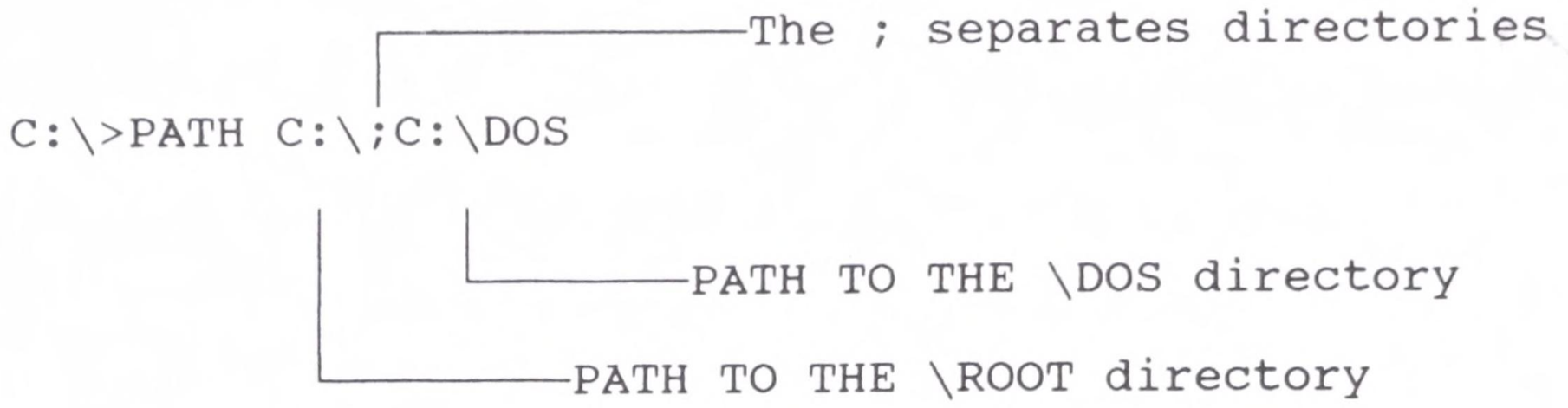


Fig. 20-1 Identifying the components of a typical PATH command statement.

You decide to format a diskette, so you type in the FORMAT command:

C:\>**FORMAT A:** <enter>

C:\>

The FORMAT command follows the PATH. The computer immediately looks in the current directory, which in this case is the \ROOT directory, for the FORMAT-.COM file. The computer does not find the FORMAT.COM file in the \ROOT directory so it looks at the PATH to find out where to look next. The PATH command tells the computer to look in the \ROOT directory, which it already has without finding the file, so now the computer follows the PATH and is told to look in the \DOS directory. So the computer looks in the \DOS directory for the FORMAT-.COM file and finds the FORMAT.COM file and runs it so you can format a diskette.

What happens if there is no PATH? You enter the command statement below:

C:\>**FORMAT A:** <enter>

The computer begins looking in the current directory, which in this case is the \ROOT directory, for the FORMAT.COM file. When the file is not found, the following message is displayed:

Bad command or file name

C:\>

The FORMAT.COM file was not found because it was not in the current directory, and there was no PATH to any other directory.

Practice makes perfect. Enter the typical PATH command shown here:

C:\>**path=c:\;c:\dos** <enter>

C:\>

Now the computer will search the \ROOT directory, and then the \DOS directory, for executable program files.

Now try the PATH command by itself:

```
C:\>path <enter>
PATH=C:\;C:\DOS

C:\>
```

The PATH command by itself displays the existing path.

Entering a new PATH command replaces the old one:

```
C:\>path=a:\<enter>
C:\>
```

Now there will be a path going to the \ROOT of drive A:. To display the existing PATH:

```
C:\>path <enter>
PATH=A:\

C:\>
```

Avoiding PATH command problems

You can enter a PATH to many drives and directories as long as you separate them with a semicolon. Just remember, the more places the computer needs to look, the longer it takes. Because you can have files with the exact same names in different directories, the wrong file could be executed, causing incorrect operation.

For example, suppose you enter the following command:

```
C:\>PATH=C:\DOS;C:\WP;C:\WS
```

You now have a path to the DOS, WordPerfect, and WordStar directories, and in that order. Let's assume a file with the name MENU.EXE exists in the WordStar and in the WordPerfect directories. You are in the \ROOT directory and you type the word MENU. The computer first looks in the current directory and does not see the MENU file, so it follows the path and then looks in the \DOS directory, but still does not find the menu file. The computer then continues along the path to the \WP directory, and it finds the file with the name MENU and executes it. But this is a problem because we wanted to execute the MENU file in the WordStar directory. Keep the paths as short as possible.

Here's another example of a long PATH:

```
C:\>path=c:\;c:\names;c:\dos;c:\people <enter>
C:  >
```

Check out the existing PATH:

```
C:\>path <enter>
PATH=C:\;C:\NAMES;C:\DOS;C:\PEOPLE

C:\>
```

Using the path given, if you typed the command DISKCOPY A: A: from the C:\> prompt, several things will happen. The \ROOT directory will first be searched for the DISKCOPY.COM file. If it is not found, the computer will then search the C:\NAMES directory for the DISKCOPY.COM file. If it is not found there, the computer will search the C:\DOS directory where it finds the file and then executes it. Because the DISKCOPY.COM file was executed from the \DOS directory, the computer doesn't continue to look in the C:\PEOPLE directory.

When you specify a PATH, always list the directories and drives in the order you want them to be searched. I recommend that floppy drives not be included in the PATH because the computer might search the floppy drive when it has no diskette in it, which will give you an error message.

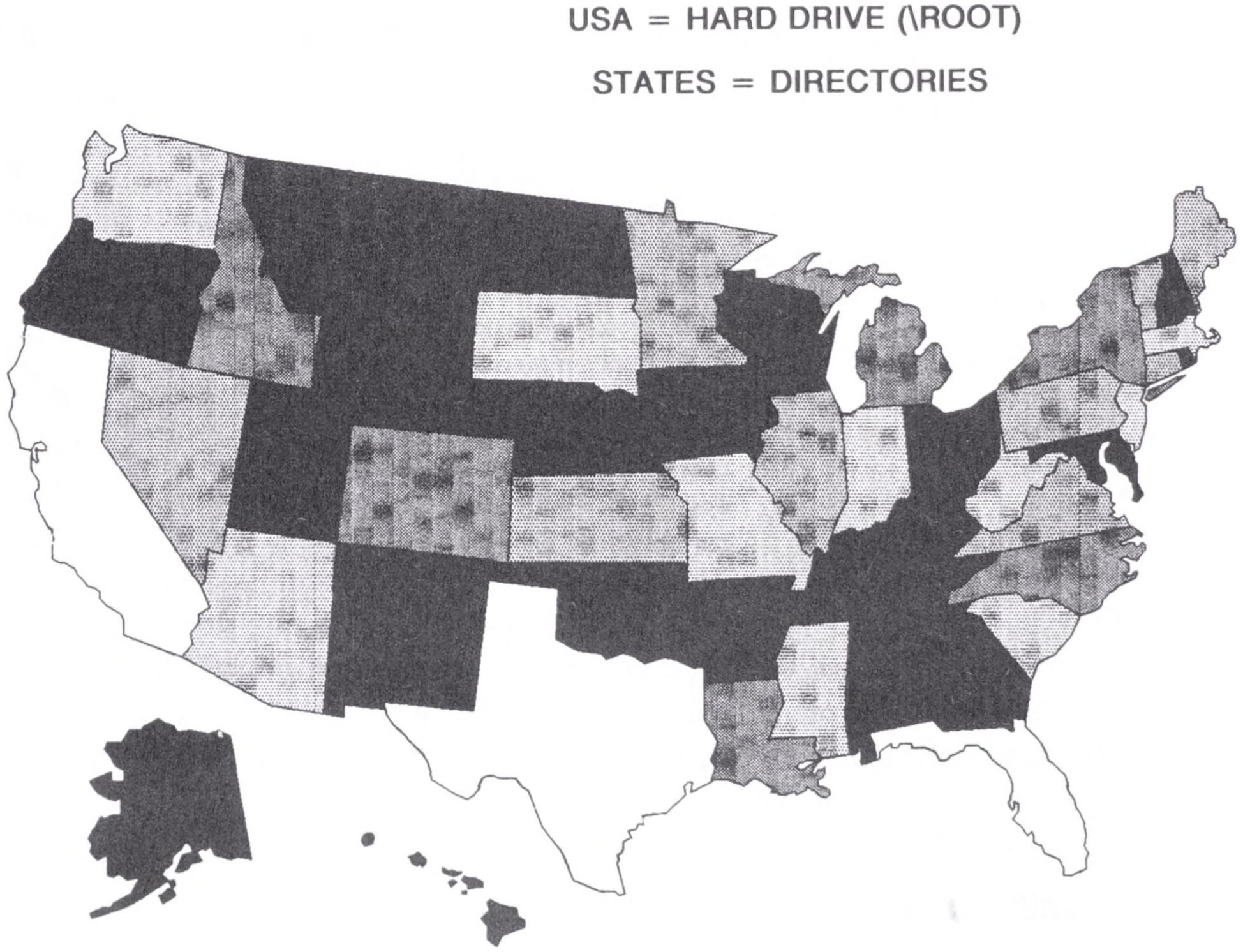


Fig. 20-2 A map of the United States being compared to a hard drive to illustrate how the PATH command works.

A story to explain the PATH command

The map in Fig. 20-2 represents the \ROOT directory of your hard drive, each state represents a directory, and each person represents a file. A large number of people are in each state, or you could say a large number of files are in each directory.

Now for the PATH command. Let's say you have a brother named Frank.com in Florida, a sister named Cathy.exe in Calif, and a cousin named Tom.exe in Texas, and considering you just won 40 million dollars in the Lotto you ask your friend Joe Computer to get Frank.com, Cathy.exe, and Tom.exe and bring them to your party.

Without a map (PATH) like the one in Fig. 20-2, Joe Computer wouldn't have any idea where to look for these people.

So, what should you do? Of course, give him a map that indicates which states to look in. The computer follows the PATH command so it knows which directories to look in. What would happen if you entered the following PATH command?

```
PATH=C:\FLORIDA;C:\CALIF;C:\TEXAS
```

Now Joe Computer knows to look in the states \FLORIDA, \CALIF, and \TEXAS for the people Frank.com, Cathy.exe, and Tom.exe.

Joe Computer will look only in the directories that the PATH command says to look in, and he can find any executable file in any of those directories.

CHAPTER 21

Format a diskette

ALL DISKETTES and hard drives must be formatted when they are new. The term *initialized* means the same as *formatted*. If you have read Chapter 9, Loading DOS, then you already know about formatting a hard drive. This chapter will explain how to format diskettes.

Why format diskettes

It is necessary to FORMAT diskettes because your system will only read and write to a formatted diskette. Formatting the diskette will divide the surface into tracks and sectors, similar to the way an audio record is divided into songs. DOS uses these tracks and sectors to locate the files saved to the diskette.

What you should already know

- Type the letters shown in **boldface** type.
- The diskette goes into the drive with the notch to the left (p. 12).
- A 360K floppy drive can only format a 360K diskette (p. 130).
- A 1.2Mb floppy drive can format 360K or 1.2Mb diskettes (p. 130).

- A 720K floppy drive can only format 720K diskettes (p. 130).
- A 1.44Mb floppy drive can format 720K or 1.44Mb diskettes (p. 130).
- The PROMPT command will show the current directory in the prompt (p. 45).
- Using the PATH command will enable you to execute the FORMAT.COM file located in the \DOS directory from any drive or directory (p. 117).

The command: FORMAT (initialize)

Getting your system ready

Formatting 360K and 1.2Mb diskettes will be discussed in detail because they are the most widely used. At the end of this chapter, you will find command statements used to format different types of diskettes in various types of drives.

Use the PROMPT PG command to show the current directory:

C>**prompt pg** <enter>

C:\>

Create a PATH going to the \DOS directory:

C:\>**path c:\dos** <enter>

C:\>

Formatting diskettes

When you format a diskette, you completely erase it, so be sure that you don't accidentally insert the wrong diskette. If you have a diskette that contains many directories, it is usually easier to erase the diskette using the FORMAT command than it is to delete all the files and remove all the directories. It was mentioned earlier that all diskettes must be formatted one time before they can be used. You can format a diskette as many times as you want without harming the diskette. In the following examples, you will be formatting 360K and 1.2Mb diskettes. Feel free to stop at any point and FORMAT as many diskettes as you like. Begin formatting a diskette in a 360K drive. If you don't have one, then skip to the lesson using a 1.2Mb floppy drive.

Format a 360K diskette

In drive A:, FORMAT a 360K diskette in a 360K floppy drive:

c:>**format a:** <enter>

Insert new diskette for drive a:
and strike ENTER when ready

Put the 360K diskette in drive A: and hit <enter>:

Head: 0 Cylinder: 39

```
Format complete

        362496 bytes total disk space
        362496 bytes available on disk

Format another (Y/N)?
```

To FORMAT another diskette, hit the Y key for yes and hit <enter>:

```
Insert new diskette for drive a:
and strike ENTER when ready

Head: 0 Cylinder: 39

Format complete

        362496 bytes total disk space
        362496 bytes available on disk

Format another (Y/N)?
```

To stop formatting, hit the N key for no and hit <enter>:

```
C:\>
```

Format a 1.2Mb diskette

In drive A:, FORMAT a 1.2Mb diskette in a 1.2Mb floppy drive:

```
C:\>format a: <enter>

Insert new diskette for drive a:
and strike ENTER when ready

Head: 0 Cylinder: 79

Format complete

        1213952 bytes total disk space
        1213952 bytes available on disk

Format another (Y/N)?
```

To FORMAT another diskette, hit the Y key for yes and hit <enter>:

```
Insert new diskette for drive A:
and strike ENTER when ready

Head: 0 Cylinder: 79

Format complete

        1213952 bytes total disk space
        1213952 bytes available on disk

Format another (Y/N)?
```

To stop formatting, hit the N key for no and hit <enter>:

```
C:\>
```

The /4 switch is used to tell the computer to FORMAT the 360K diskette in high-density drive A: as a 360K diskette and not a 1.2Mb diskette. In drive A:, FORMAT a 360K diskette in a 1.2Mb floppy drive:

```
C:\>format a:/4 <enter>

Insert new diskette for drive a:
and strike ENTER when ready
```

Put the 360K diskette in drive A: and hit <enter>:

```
Head: 0 Cylinder: 39
Format complete

        362496 bytes total disk space
        362496 bytes available on disk

Format another (Y/N)?
```

To stop formatting, hit the N key for no and hit <enter>:

```
C:\>
```

Other FORMAT command statements

The following command statements will FORMAT 3½ inch diskettes in various situations:

- FORMAT a 720K diskette in a 720K drive as drive B:

  ```
  C:\>format b: <enter>
  ```

- FORMAT a 1.44Mb diskette in a 1.44Mb drive as drive A:

  ```
  C:\>format a: /t:80 /n:9 <enter>
  ```

- FORMAT a 720K diskette in a 1.44Mb drive as drive A:

  ```
  C:\>format a:  t:40  n:9 <enter>
  ```

Making a diskette bootable

You can create a diskette that will boot your system by adding the /S switch to your FORMAT command statement. The /S switch, used with the FORMAT command, means add the DOS SYSTEM to the disk after it is formatted. The DOS SYSTEM is composed of two hidden system files and the COMMAND.COM file, which are always in the \ROOT directory. You can make a system diskette from any type of floppy diskette, but because the computer will not boot from floppy drive B:, FORMAT a system diskette in drive A:.

Make a 1.2 Mb system diskette in drive A: with this command:

```
C:\>format a:/s <enter>
```

```
Insert new diskette for drive a:
and strike ENTER when ready

Head: 0 Cylinder: 79

Format complete
System transferred

     1213952 bytes total disk space
       69120 bytes used by system
     1144832 bytes available on disk

Format another (Y/N)?
```

To stop formatting, hit the N key for no and hit <enter>:

```
C:\>
```

Add DOS files to your system diskette:

```
C:\>copy \dos a:\ <enter>
```

Now you are copying the files in the \DOS directory of drive C: to the \ROOT directory of drive A:.

Boot your system using your new system diskette. Put your new system diskette into drive A;, and hit the reset button. Your system will boot up, ask for the time and date, and then show the A7 prompt, and you will have the A> prompt on the monitor screen. You should always have a couple system diskettes like the one you just made. If a system file accidentally gets deleted from your hard drive or your hard drive develops a problem, you will need a system diskette to boot your system.

Bad sectors when formatting

Tracks are divided into sectors. When formatting a diskette, the computer finds and locks out sectors that cannot be used for storing data. The following example will show you what happens when you FORMAT a diskette that has bad sectors.

```
C:\>format a: <enter>

Insert new diskette for drive a:
and strike ENTER when ready

Head: 0 Cylinder: 39

Format complete

     362496 bytes total disk space
      20480 bytes in bad sectors
     342016 bytes available on disk

Format another (Y/N)?
```

In the previous example, 20,480 bytes are wasted in bad sectors. If you have a

diskette that shows bad sectors, try formatting it again. If, after formatting three times, the bad sectors are still there, it's a good idea to throw it away. You can use the faulty diskette, but not with the DISKCOPY command because it will write to the bad sectors causing errors when you read the diskette. When you use the COPY command to copy files to the diskette, the computer will avoid writing to the bad sectors, eliminating the problem of errors.

Next you will learn how to use the DISKCOPY command for when you want to make copies of diskettes.

CHAPTER 22

DISKCOPY

YOU CAN COPY one diskette called a *source* diskette to another diskette called the *target* diskette using the DISKCOPY command. The main benefit of using the DISKCOPY command is that it's easier than making directories and using the COPY command to copy files into those directories.

Why DISKCOPY

Use the DISKCOPY command when you want an exact duplicate of a diskette. The copy you make will have all the directories, subdirectories, files, and even hidden files just like the source diskette. The source diskette will not change in the process. Use the DISKCOPY command to make copies of your software programs, like WordPerfect, and use the copies to install the software. Should your copies become damaged or erased during installation, you will have your originals which you can copy again.

What you should already know

- Type the letters shown in **boldface** type.
- The first floppy drive is drive A:, the second floppy drive is drive B:, and the hard drive is drive C:.
- 360K and 720K diskettes are DSDD (double-sided double density) (p. 11).

- 1.2Mb and 1.44Mb diskettes are high density (p. 11).
- The PROMPT PG command will display the current directory in the prompt (p. 64).
- The PATH command enables the computer to follow a route to the designated directories (p. 117).

The command: DISKCOPY (make a duplicate diskette)

Drives and diskettes

Only diskettes of the same size and density can be diskcopied. For example, you can DISKCOPY a 5¼ inch 360K to a 5¼ inch 360K, or a 3½ inch 720K to a 3½ inch 720K, or a 5¼ inch 1.2 Mb to a 5¼ inch 1.2Mb, or a 3½ inch 1.44Mb to a 3½ inch 1.44Mb. The type of floppy drive(s) you have will determine what diskettes you can diskcopy as stated in the following examples.

If your system has one 5¼ inch 360K floppy drive, you can DISKCOPY:

- A 360K diskette in drive A: to a 360K diskette in drive A:.

If your system has one 5¼ inch 1.2Mb floppy drive you can DISKCOPY:

- A 1.2Mb diskette in drive A: to a 1.2Mb diskette in drive A:.
- A 360K diskette in drive A: to a 360K diskette in drive A:.

If your system has a 1.2Mb drive as drive A: and a 360K drive as drive B:, you can DISKCOPY:

- A 1.2Mb diskette in drive A: to a 1.2Mb diskette in drive A:.
- A 360K diskette in drive A: to a 360K diskette in drive A:.
- A 360K diskette in drive B: to a 360K diskette in drive B:.
- A 360K diskette in drive A: to a 360K diskette in drive B:.
- A 360K diskette in drive B: to a 360K diskette in drive A:.

If your system has a 1.44Mb floppy drive you can DISKCOPY:

- A 1.44Mb diskette in drive A: to a 1.44Mb diskette in drive A:.
- A 720K diskette in drive A: to a 720K diskette in drive A:.

If your system has a 1.44Mb as drive A: and a 720K drive as drive B: you can DISKCOPY:

- A 1.44Mb diskette in drive A: to a 1.44Mb diskette in drive A:.
- A 720K diskette in drive A: to a 720K diskette in drive A:.
- A 720K diskette in drive B: to a 720K diskette in drive B:.
- A 720K diskette in drive A: to a 720K diskette in drive B:.
- A 720K diskette in drive B: to a 720K diskette in drive A:.

Note: Remember, you cannot diskcopy a high-density floppy to a 360K floppy (DSDD) or vice versa.

DISKCOPY exercises

To do the following DISKCOPY exercises, you will need a source diskette (original) with software on it and a target diskette (to be the copy). The target diskette will be formatted, if needed, and erased during the DISKCOPY process. I recommend that you put a write-protect tab on your source diskettes to prevent erasure just in case you accidentally insert the wrong diskette.

Enter the command statement to view the current directory in the prompt:

```
C>prompt $p$g <enter>
C:\>
```

Enter the PATH command below to be able to execute the DISKCOPY.COM file in the \DOS directory from the \ROOT directory:

```
C:\>path c:\dos <enter>
C:\>
```

For the next exercise, choose the exercise that describes the type of floppy drives in your system:

Your system has one 360K floppy drive. DISKCOPY a 360K diskette to a 360K diskette:

```
C:\>diskcopy a: a: <enter>
Insert SOURCE diskette in drive A:
Press any key when ready . . .
```

Put your 360K source diskette in drive A: and hit a key. The drive light will come on and the computer will start copying the data from the floppy disk into RAM (memory) and you will see the following message:

```
Copying 40 tracks
9 Sectors/Tracks, 2 Side(s)
Insert TARGET diskette in drive A:
Press any key when ready . . .
```

Now put your 360K target diskette into drive A: and hit a key. The drive light will come on and the data in RAM that was copied from the source diskette will be copied to the target diskette. When copying is complete, you will get the following message:

```
Copy another diskette (Y/N)?
```

If you want to copy another diskette, type the letter y and hit the Enter key, or type the letter n to quit diskcopying.

Your system has one 1.2Mb floppy drive. When copying 1.2Mb to 1.2Mb diskettes in drive A:, you will need to switch diskettes at least 3 times because the

RAM will only hold about 40% of the source diskettes data each time the drive reads it. To copy a 1.2Mb to a 1.2Mb diskette, the sequence is:

C:\>**diskcopy a: a:** <enter>

Insert SOURCE diskette in drive A:

Press any key when ready . . .

Insert your 1.2Mb source diskette in drive A: and hit a key. The drive light will come on and the computer will start copying the data from the floppy disk into RAM (memory) and you will see the following message:

Copying 80 tracks
15 Sectors/Track, 2 Side(s)

Insert TARGET diskette in drive A:

Press any key when ready . . .

Now put your 1.2Mb target diskette into drive A: and hit a key. The drive light will come on and the data in RAM that was copied from the source diskette will be copied to the target diskette. When copying is complete, you will get the following message:

Insert SOURCE diskette in drive A:

Press any key when ready . . .

Reinsert the 1.2Mb source diskette in drive A: and hit a key. The drive light comes on again, and the second block of data is read into RAM and you get the message:

Insert TARGET diskette in drive A:

Press any key when ready . . .

Reinsert your 1.2Mb target diskette into drive A: and hit a key. The drive light lights, and the second block of data is copied to the target diskette. The following message appears:

Insert SOURCE diskette in drive A:

Press any key when ready . . .

Reinsert the 1.2Mb source diskette in drive A: and hit a key. The drive light comes on again, and the third block of data is read into RAM and you get the message:

Insert TARGET diskette in drive A:

Press any key when ready . . .

Reinsert your 1.2Mb target diskette into drive A: and hit a key. The drive light lights, and the third block of data is copied to the target diskette. The following message appears:

Copy another diskette (Y/N)?

If you want to copy another diskette, type the letter y and hit the Enter key, or type the letter n to quit diskcopying.

Your system has 1.2Mb and 360K floppy drives. This is the best system if you are going to copy a large number of 360K diskettes. As you will see, using two drives is the easiest and fastest method of diskcopying. It is best to read the 360K source diskette in the 1.2MB drive and copy to the 360K drive:

```
C:\>diskcopy a: b: <enter>
Insert SOURCE dskette in drive A:
Insert TARGET diskette in drive B:
Press any key when ready . . .
```

Put your source diskette in drive A: and the target diskette in drive B: and hit a key. You'll get the message:

```
Copying 40 tracks
9 Sectors/Track, 2 Side(s)
```

The drive A: light will come on, and the data from the source diskette will be copied to RAM. Then the drive B: light will come on, and the data in RAM will be copied to the target diskette, and you will get the following message:

```
Copy another diskette (Y/N)?
```

If you want to copy another diskette, type the letter y and hit the Enter key, or type the letter n to quit diskcopying.

CHAPTER 23

How to BACKUP

DOS PROVIDES an easy way to backup your hard drive. The more important your data the more important it is to BACKUP your hard drive. You can BACKUP your hard drive to floppy diskettes or to a magnetic tape drive. If your data is not replaceable, it is a good idea to make a second BACKUP on diskettes and store them in a safe place where a fire cannot destroy both copies. I also recommend making a hard copy of documents.

Why BACKUP the hard drive

A hard drive, which is a mechanical device, might last three years or maybe five years. On the other hand, if defective, it could fail after using it a few minutes or any time after that. When it fails (called a *crash*) all data on the hard drive is gone forever! DOS provides the BACKUP command to enable you to copy all the data from your hard drive to diskettes so you can RESTORE the data from the diskettes to another hard drive.

What you should already know

- ☑ Type the letters shown in **boldface** type.
- ☑ A hard disk and hard drive are the same thing (p. 10).

- Diskettes must be formatted using the FORMAT command (p. 123).
- A PATH to the \DOS directory will allow you to execute the BACKUP command from any drive or directory (p. 117).
- The reverse of the BACKUP command is the RESTORE command.
- A forward slash / is called a switch and is used to tell the computer that you want the command to do something additional. For example, /s means BACKUP all subdirectories (p. 46).

The command: BACKUP

The BACKUP and RESTORE commands are difficult to use especially when you only backup one file or directory. The reason for this is that the BACKUP and RESTORE commands don't follow normal DOS logic.

The BACKUP command is most frequently used to backup hard drive C: to floppy drive A:.

How to BACKUP your hard drive

The first thing you must do is check your hard drive to see how many megabytes are occupied by data. Use the check disk command:

```
C:\>chkdsk <enter>
21234449 bytes total disk space
    5238 bytes in 15 directories
11115553 bytes in 354 user files ← (11 megabytes to BACKUP)
10113658 bytes available on disk

  655360 bytes total memory
  594560 bytes free

C:\>
```

Let's assume it's your hard drive in the above example and you have approximately 11 megabytes filled with data in 354 user files. I will assume you have a high-density floppy drive. Each of the high-density (1.2 Mb) diskettes will hold approximately 1 Mb. Because you have 11 megabytes to BACKUP, you will need at least 11 diskettes. Again, the diskettes used for BACKUP must be formatted. If you are using a 360K (DSDD) floppy drive, you will need approximately 37 diskettes (3.3 times as many).

Change to the \DOS directory:

```
C:\cd\dos <enter>
```

The following command statement will start the BACKUP in the \ROOT directory of drive C: and send all the files to drive A: with all its directories and subdirectories.

```
C:\DOS>backup c:\ a:/s <enter>
Insert backup diskette 01 in drive A:
```

```
Warning! Files in the target drive
A:\ root directory will be erased
strike any key when ready
```

Put a diskette in drive A: and hit a key to start the process. You will see the file names preceded by their directory(s) listed on the monitor as they are being copied onto the diskette.

One of the wonderful things about the BACKUP procedure is it records the file names and their directories in a file called BACKUPID.@@@. When you RESTORE your BACKUP diskettes to another hard drive, DOS reads the BACKUPID.@@@ file and automatically creates the directories and puts the files where they belong. Your new hard drive is now set up just like your old one.

Also, you can BACKUP all the files in just one directory.

The situation

Suppose that you have all your original Lotus 1-2-3 program diskettes, and you don't mind reinstalling them if your hard disk crashes. You are creating a series of spreadsheets using Lotus 1-2-3 to help you track production and costs in your pizza business. Your Lotus 1-2-3 program files are located in the directory \123 and your spreadsheets are located in the subdirectory \123\PIZZA. Suppose you want to BACKUP the \123\PIZZA directory where your spreadsheets are located. Put a formatted diskette in drive A:

```
C:\DOS>backup c:\123\pizza\*.*  a: /s <enter>

Insert backup diskette 01 in drive A:

Warning! Files in the target drive
A:\ root directory will be erased
strike any key when ready
```

Put a diskette in drive A: and hit a key to start the process. You will see the spreadsheet files listed on the monitor as they are being copied onto the diskette(s). The prompt will appear when the BACKUP is complete.

```
C:\>
```

Things you should know

When the files are backed up, their format is changed. If you are using DOS 3.2 or earlier, and you do a DIR on one of the backup floppies you will see that the file names look the same as before the BACKUP. However, you cannot use them until they are restored using the RESTORE command in your \DOS directory.

Each file has its own *archive bit*. When you first load all your software onto the hard drive, the archive bit is set on. When a file is backed up using the BACKUP command, the archive bit is set off (cleared). This is how the computer knows if a file needs to be backed up when you perform a BACKUP update.

The command demonstrated above (BACKUP C:\A:/S) will BACKUP all files no matter how the archive bit is set.

The /m switch added after the /s of the BACKUP command will cause the computer to look at the archive bit and decide which files should be backup up to the BACKUP update diskette.

If you have a printer, you can make a hard copy (print out) of your BACKUP by holding down the CTRL key and hitting the PrtSc (Print Screen) key. When you do this, everything that prints on the monitor screen will also print on the printer. You will have a listing of each file, the directory the file is in, and the number of the BACKUP diskette the file is on. To turn this printing feature off hold down the Ctrl key and hit the PrtSc key again.

BACKUP update

After the entire hard drive is backed up, you will want to backup new letters you have written or old files you have modified. You do this by adding a couple switches to the command.

The situation

You just backed up the entire hard drive and have written a letter to your friend. Now you want a backup (copy) of the letter on a diskette, but you don't want to back up the whole hard drive again. You also want to backup other new or modified files since the full backup was done. Let's do a BACKUP *update*.

You must use the last diskette from your full backup as backup update #1. If you try to use a blank diskette, the computer will loop and keep asking you to insert the last backup diskette. Put the diskette in drive A:

C:\DOS>**backup c:\ a:/s/m/a** <enter> (starts looking for files in the \ROOT directory)

When you hit the Enter key above, the computer starts looking for files in the \ROOT directory of drive C: that have their archive bits set to on. Those files are backed up to the diskette, and then their archive bits are set to off.

Things you should know

The /s switch tells the computer to BACKUP all files in all the directories and subdirectories.

The /m switch tells the computer to backup only the files that have their archive bits set to on. These are the files that have been changed or are new files on the hard drive.

The /a switch tells the computer to *add* to the diskette in drive A:. When you do a full BACKUP, each diskette is erased. When you do a BACKUP update, you start with your last full backup diskette and keep using it until it is full. When it is full, a message will come on the monitor telling you to insert another diskette into drive A:.

You should always have extra blank formatted diskettes in case you have underestimated the number needed to do the BACKUP, which is usually the case.

If you want to stop the BACKUP process, you hold down the Ctrl key and hit the letter C key.

Every time a file is backed up, the archive bit is set to off.

Suppose on Monday you create a file using Lotus 1-2-3 and name it SALES89.WK1. Monday evening, you perform a BACKUP update and the file SALES89.WK1 is backed up to update diskette 01. On Tuesday you change the SALES89.WK1 file, and on Tuesday evening you perform a BACKUP update to update diskette 01. The update diskette 01 will contain a file named SALES89.WK1 on it from Monday and a file named SALES89.@01 from Tuesday. When the file is restored, DOS will always RESTORE the latest version which, in this case, is the one from Tuesday.

If, for some unknown reason, your computer will not recognize your last full backup diskette, you can quickly make one using the full BACKUP command BACKUP C:\ A: /s. After four or five files have backed up to the diskette in floppy drive A:, hold down the Ctrl key and hit the letter C key. This terminates the BACKUP procedure and makes the diskette in drive A: the last BACKUP diskette. This diskette will be accepted when you do the BACKUP update.

What's next

Now that you know how to use the BACKUP command, you need to know how to use the RESTORE command. You must use the RESTORE command to copy the BACKUP diskettes back to the hard drive. The RESTORE command is the subject of the next chapter.

CHAPTER 24

How to RESTORE

THE RESTORE COMMAND is the opposite of the BACKUP command. The BACKUP command copies files and directories from the hard drive to floppy diskettes, and the RESTORE command copies the files and directories from the diskettes back to the hard drive.

Why and when to restore

You RESTORE your BACKUP of floppy diskettes to the hard drive when your hard drive has crashed or when you have lost files. If you accidentally delete a file, you can RESTORE it from your BACKUP diskettes. RESTORE can only be used with diskettes that contain files that have been backed up using the DOS BACKUP command.

What you should already know

- Type the letters in boldface type: **boldface**.
- BACKUP files have normal file names, but can only be used if they are restored (DOS version 3.2 or earlier).
- You BACKUP because your hard drive will eventually fail (p. 135).
- Typing PATH C:\DOS will enable you to use DOS commands from anywhere in the computer (p. 117).

- A forward slash / (switch) is used to tell the computer that you want the basic command to do something additional. For example, /s means all subdirectories (p. 46).
- *.* means all files (p. 45).

The command: RESTORE (restore backup files to original state)

Note: The BACKUP and RESTORE commands cause difficulty for most computer users. The reason for this is that these commands don't follow normal DOS logic.

RESTORE drive A: to drive C:

It makes good sense to provide some examples that you can use by substituting your own drive letters and file names. The following is the most popular way to use the RESTORE command.

The situation

Your hard drive only lasted 3 months before it died (crashed). You take the computer to your dealer who replaces the hard drive. He formats the hard drive and gives you back the computer. You, being a wise person, have a complete set of BACKUP diskettes and some BACKUP update diskettes. You are a little nervous because you had created two chapters of a book that were so good, they would be difficult to duplicate if lost. Now what do you do?

Insert your DOS system diskette into drive A:. Turn the computer on and after booting, hit the Enter key two times to get the A> prompt.

Check the diskette for the RESTORE.COM file:

A:>**dir restore.*** <enter>

If the RESTORE.COM file is not listed, then locate the diskette with the RESTORE.COM file on it, and insert it into drive A:.

The next thing you do is type in the RESTORE command using the proper switches to get the results you want. You want to restore all the files on the BACKUP diskettes to drive C:, and you want them to be in the same directories just like they were when you did the BACKUP. Enter the following command statement:

A:>**restore a: c:/s** <enter> (/s means put the files in their directories)

You will get this message from the computer:

Insert backup diskette 01 into drive A:
strike any key when ready

Now you remove the DOS diskette from drive A: and put in the backup number 01 diskette and hit a key. You will see the file names and directories on the monitor as they are being restored to the hard drive.

Note: The diskette will not lose data. It can be kept and used again if another RESTORE is needed.

When diskette 02 is needed, you will see the following message:

```
Insert backup diskette 02 into drive A:
strike any key when ready
```

Continue to insert the BACKUP diskettes by number as the computer asks for them. When the RESTORE is complete, the computer will stop asking for more diskettes.

I'll bet you are wondering, what about the BACKUP update diskettes? Here's the scoop. If you started your BACKUP update using the last diskette from your original backup, your update diskettes will become part of your original backup, and the computer will ask for them by number. If you used Ctrl–C when doing a BACKUP to create a last BACKUP diskette, then you can use the same RESTORE command to RESTORE your update diskettes. You use the same RESTORE command as above. Put the DOS diskette with the RESTORE.COM file in drive A:

```
A:>restore a: c:/s <enter>

Insert backup diskette 01 into drive A:
strike any key when ready
```

Remove the DOS diskette and put the backup update diskette number 01 in drive A: Then hit any key.

Simply put the backup diskettes into drive A: as the computer asks for them until it stops asking, which means the BACKUP is complete.

Now hold down the Ctrl and Alt keys and hit the Del key to reboot the system, or you can hit the red reset button. Be sure the floppy drive door is open so the computer will boot up just like it did before.

If the computer doesn't boot properly, there are many things that could be wrong. You will need the help of a computer professional.

Restoring just one directory and all its files

You don't have to RESTORE your whole hard disk if you accidentally deleted files from a directory or subdirectory.

The situation

You accidentally erased all the files in your Lotus 1-2-3 directory. Now you want to RESTORE the Lotus 1-2-3 files from your BACKUP diskettes to your hard drive. Your hard drive has all its other directories and files intact, and you have a PATH to the \DOS directory. What do you do?

Enter the following command statement:

```
C:\>restore a: c:\123\*.* /s <enter>
```

Note: I recommend always using the /s switch. It will cause all the subdirectories of the \123 directory to also be restored.

You will get the following message:

```
Insert backup diskette 01 into drive A:
strike any key when ready
```

If you have 10 BACKUP diskettes and you know the \123 directory is on number 04 diskette, then put the number 04 diskette into the A: drive instead of the number 01 diskette it requested. If you put the number 01 diskette in drive A: and hit a key to start the process, you will be asked to put diskette 02 into drive A: when the \123 directory is not found on the 01 diskette. You will then be asked to put in the next higher number diskette until the \123 directory is found, at which time the computer will begin restoring the files.

If you put the number 04 diskette into drive A: and hit a key to begin the process, you will get the following message:

```
*** Files were backup up (the date of backup) ***

Warning! Diskette is out of sequence
Replace diskette or continue if okay
Strike any key when ready
```

No problem. Just hit a key to begin the process and your complete directory of files will be restored to the \123 directory.

Restoring just one file

You don't need the whole directory, but you do need that one file you just destroyed. The RESTORE command can be used here, also.

The situation

A week ago, you wrote a detailed report and you named it REPORT1.LTR. It's on one of your BACKUP update diskettes. Today you decide to print it, so you bring it up in the WordPerfect word processor and decide to make some corrections. After playing around with spacing, different font styles and formatting, you accidentally save it replacing the original. Knowing how much work it would be to straighten out all the weird things you did to the file, you decide to RESTORE the original version from your BACKUP update diskettes.

Enter the following command statement:

C:\>**restore a: c:report1.ltr /s** <enter>

Note: The /s switch is necessary to locate and RESTORE the file in its proper directory structure. You'll get the message:

```
Insert backup diskette 01 into drive A:
strike any key when ready
```

Simply put the BACKUP update diskette with the REPORT1.LTR file on it into drive A: and hit a key.

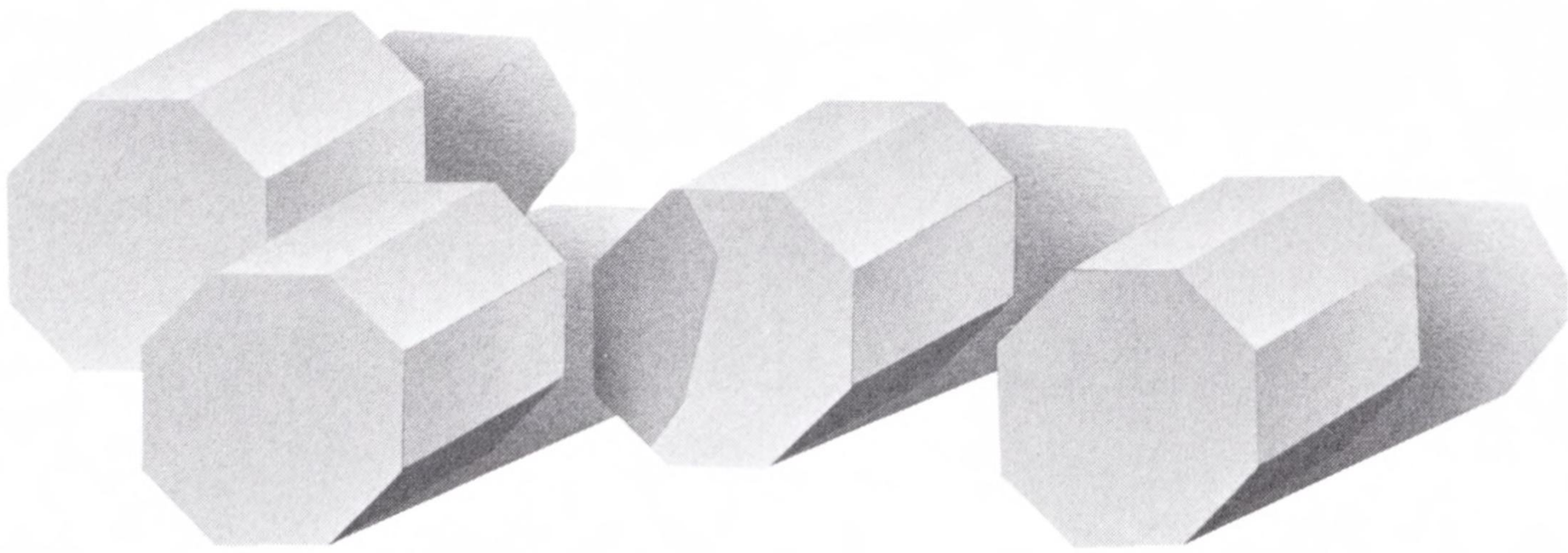
If the diskette in drive A: is not the number 01 diskette, you will get this message:

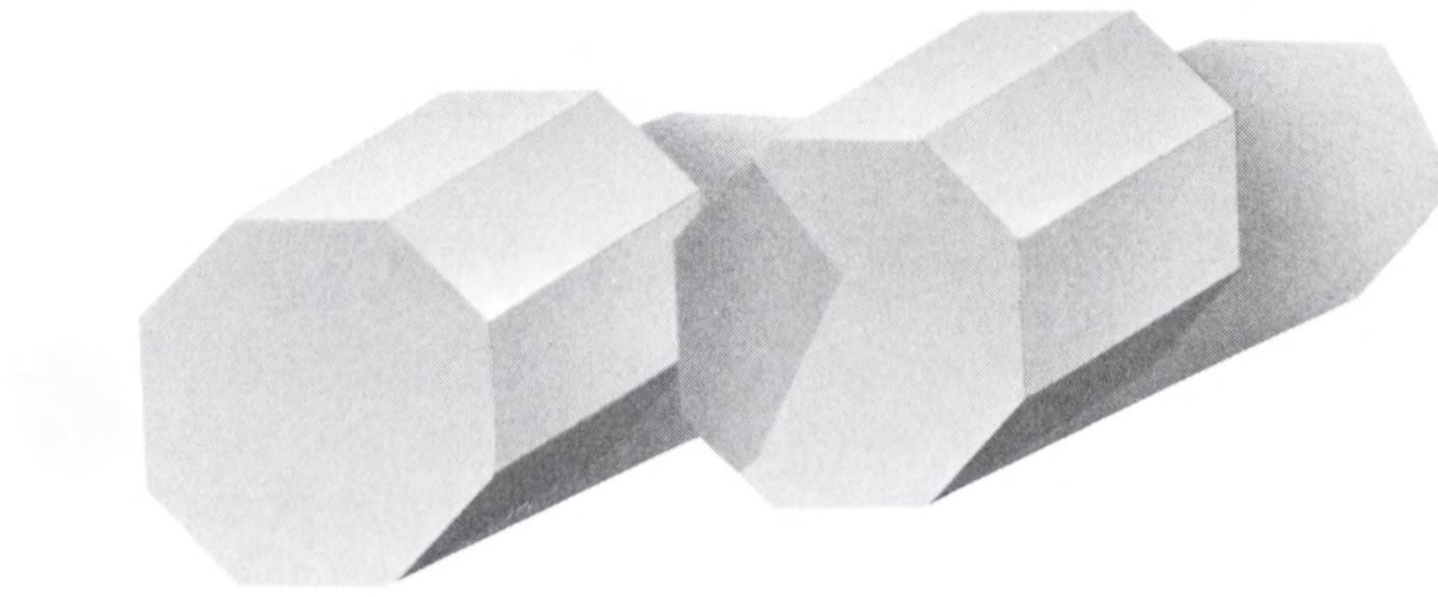
```
*** Files were backed up 07/07/1988 ***    (the date of backup)

Warning! Diskette is out of sequence
Replace diskette or continue if okay
Strike any key when ready
```

Hit a key and the process will begin. Your file will be restored to the \WP directory.

Part 3

Operations





CHAPTER 25

The AUTOEXEC.BAT file

THE AUTOEXEC.BAT file is the second file that is automatically executed when the computer is turned on. If this file is absent from the \ROOT directory, you will get a request for the time and date. If the AUTOEXEC.BAT file is in the \ROOT directory, the computer skips the time and date request and begins executing the commands in the file. You can add the TIME and DATE commands to the AUTOEXEC.BAT file if you want to make these entries.

Why have an AUTOEXEC.BAT file?

Normally, the AUTOEXEC.BAT file is used to set up the system parameters using DOS commands like PROMPT and PATH. It's also used to execute programs, change drives, and change directories in what's called the batch processing mode. Simply stated, each command in the file is executed in succession.

What you should already know

- COPY CON means COPY from CONsole (p. 73).
- The BAT extension designates a batch file (p. 44).
- You can run a batch file by typing the file name (p. 44).
- The PROMPT PG command will make the current directory visible in the prompt (p. 64).
- The PATH command will create a route to specified directories and enable execution of the .COM, .BAT, and .EXE files in those directories (p. 117).

Making the AUTOEXEC.BAT file

Before making the AUTOEXEC.BAT file, it is necessary to make the \ROOT directory the current directory. Remember, the AUTOEXEC.BAT file must be in the \ROOT directory for it to be executed immediately after the computer is booted.

Use the PROMPT command to make the current directory visible:

```
C>prompt $P$G <enter>
C:\>
```

If necessary, change to the \ROOT directory:

```
C:\>cd \<enter>
C:\>
```

Now make an experimental AUTOEXEC.BAT file:

```
C:\>copy con autoexec.bat <enter>
path=c:\dos;C:\   <enter>
time              <enter>
date              <enter>
prompt $p$g       <enter>
cd\names          <enter>
type john.doc     <enter>
cd \              <enter>
^Z <enter>    (push the F6 function key for a ^Z to end the file)
    1 file(s) copied
C:\>
```

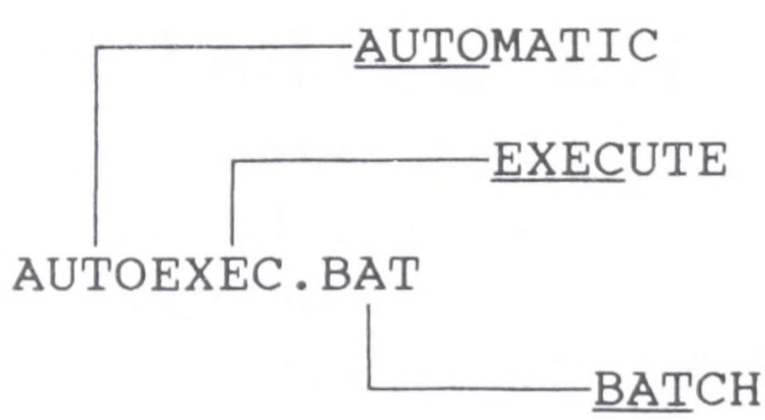


Fig. 25-1 The meaning of the AUTOEXEC.BAT file name and extension.

Use the DIR command to be sure the AUTOEXEC.BAT file was created.

```
C:\>dir <enter>

     Volume in drive C has no label
     Directory of C:\
COMMAND   COM   # of bytes   <date>   <time>
BOB       TXT
JOHN      DOC
SUE       GRL
MARY      GRL
NAMES     <DIR>
PEOPLE    <DIR>
TOYS      <DIR>
BOOKS     <DIR>
CARS      <DIR>
CONFIG    SYS
AUTOEXEC  BAT   (the file you just made)
          12 file(s)   # of bytes free

C:\>
```

How the AUTOEXEC.BAT file operates

To get a better understanding of how the file operates, let's look at each line in the AUTOEXEC.BAT file you just made.

PATH C:\DOS;C:\ This command sets a path to the \DOS and then the \ROOT directories of drive C:. This PATH allows you to run any of the DOS programs in the \DOS directory or any executable file in the \ROOT directory.

TIME This command will show the current TIME and ask you to enter a new TIME. If the current time is correct, hit the Enter key to continue.

DATE The DATE command works the same way as the TIME command.

PROMPT PG This command will change the C> prompt to include the current directory. If you are in the \ROOT directory the prompt will now look like this C:\> or, if the \NAMES directory is the current directory, the prompt would look like C:\NAMES>.

CD\NAMES This will change from the \ROOT directory to the \NAMES directory making the \NAMES directory current.

TYPE JOHN.DOC The computer will now TYPE the contents of the JOHN.DOC file, which is in the \NAMES directory, on the monitor screen.

CD\ Now the computer changes from the \NAMES directory back to the \ROOT directory making the \ROOT directory current.

You can execute the AUTOEXEC.BAT file by rebooting your computer or by typing the file name.

Type the file name to start it executing:

```
C:\>autoexec <enter>
C:\>path=c:\dos;c:\
C:\>time
Current TIME is 0:03:31.24
Enter new TIME: <enter>
C:\>date
Current DATE is Tue 4-01-1989
Enter new DATE (mm-dd-yy): <enter>
C:\>prompt $p$g
C:\>cd\names
C:\NAMES>type john.doc
This is John's file.
The end of this file.
C:\NAMES>cd\
C:\>
```

You just ran the experimental AUTOEXEC.BAT file and watched the commands on the monitor screen as they executed.

Make another AUTOEXEC.BAT file

Now that you know how the AUTOEXEC.BAT file works, below is a basic file that you can make and modify to suit your needs:

```
C:\>copy con autoexec.bat <enter>
path c:\dos;c:\ <enter>
prompt $p$g <enter>
C:\mouse\mouse.com <enter>    (see Note below)
^Z <enter>    (push the F6 function key for ^Z to end the file)
        1 file(s) copied
C:\>
```

Note: The line c:\mouse\mouse.com <enter> loads the mouse driver into memory by executing the MOUSE.COM file in the \MOUSE directory of drive C:.

TYPE the contents of the AUTOEXEC.BAT file to the monitor screen:

```
C:\>type autoexec.bat <enter>
path c:\dos;c:\
prompt $p$g
c:\mouse\mouse.com
C:\>
```

An AUTOEXEC.BAT file to run WordPerfect

The following AUTOEXEC.BAT file will run WordPerfect and change to the \ROOT directory when you leave WordPerfect.

Make a new AUTOEXEC.BAT file:

```
C:\>copy con autoexec.bat <enter>
path c:\dos;c:\ <enter>
prompt $p$g <enter>
c:\mouse\mouse.com <enter>
cd\wp
WP
cd\
^Z <enter>    (push the F6 function key for ^Z to end the file)
        1 file(s) copied
C:\>
```

Note: If you accidentally put something weird in the AUTOEXEC.BAT file, you could create a looping situation. If you experience this condition, you will need to boot your system using the DOS system diskette and replace the AUTOEXEC.BAT file causing the problem by making a new one.

CHAPTER 26

The CONFIG.SYS file

THE CONFIG.SYS file is the first file executed when the computer is turned on (booted). It allows you to configure your system by altering system parameters and loading device drivers.

What a CONFIG.SYS file is

The CONFIG.SYS file is a system file and is the only system file you can modify. Both IBM-DOS and MS-DOS have two hidden system files that are loaded into memory by the BIOS when the computer is booted. These hidden system files are located in the \ROOT directory and can only be listed by changing their attributes or by the use of a non-DOS program like HDIR.COM. The system files loaded by DOS cannot be altered, so the CONFIG.SYS file exists to enable you to modify the default values built into the DOS system files.

What you should already know

- COPY CON means COPY from CONsole (p. 73).
- The DIR command will list the files in the current directory (default) unless you specify other parameters (p. 63).

- RAM means Random Access Memory (p. 47).
- The PROMPT PG command will make the current directory visible in the prompt (p. 64).
- The PATH command will create a route to selected directories and enable the execution of the files in those directories (p. 117).

Making a CONFIG.SYS file

The CONFIG.SYS file is an ASCII file so you can use the COPY CON command to create it. First change to the \ROOT directory of drive C:

```
C:\>cd \ <enter>
C:\>
```

Use the COPY CON command to make the CONFIG.SYS file:

```
C:\>copy con config.sys <enter>
buffers=20 <enter>
files=20 <enter>
break=on <enter>
^Z <enter>    (push the F6 function key for the ^Z to end the file)
        1 file(s) copied
C:\>
```

Make sure the CONFIG.SYS file is in the \ROOT directory:

```
C:\>dir <enter>
        Volume in drive C has no label
        Directory of C:\    the \ROOT directory
COMMAND   COM    # of bytes   <date>   <time>
BOB       TXT
JOHN      DOC
SUE       GRL
MARY      GRL
NAMES     <DIR>
PEOPLE    <DIR>
TOYS      <DIR>
BOOKS     <DIR>
CARS      <DIR>
```

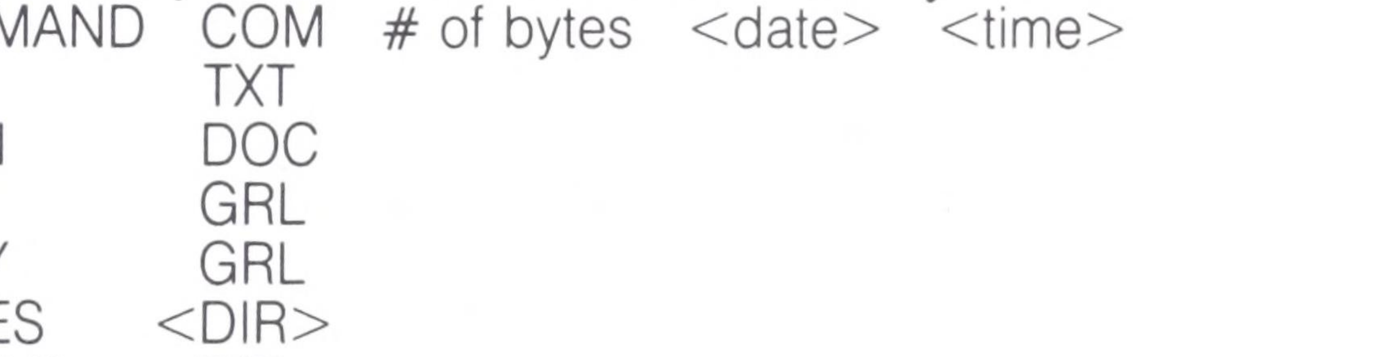


Fig. 26-1 The meaning of the CONFIG.SYS file name and extension.

```
CONFIG      SYS    (the file you just made)
          11 file(s)   # of bytes free

C:\>
```

Display the CONFIG.SYS file data on the monitor screen:

```
C:\>type config.sys <enter>
buffers=20
files=20
break on

C:\>
```

The meaning of CONFIG.SYS file commands

The most common CONFIG.SYS file commands are listed here.

Buffers=20—This command means that 10,560 bytes of memory will be used for storing data retrieved from a disk drive. This increases access speed to information that has already been retrieved.

Files=20—This line means that 20 files can be open at one time. I have come across some software programs that require a minimum of 20 files to be open. Without this statement in the CONFIG.SYS file, the software programs will not run.

Break on—This will increase your ability to stop programs from running. Holding the Ctrl down and hitting the letter C key is how you initiate a break.

Examples of other statements used in the CONFIG.SYS file

For DOS 3.1 and 3.2:

```
device=vdisk.sys 384 512 64 /e    (RAM disk in extended memory)
```

For DOS 3.3 and 4.0:

```
device=ramdrive.sys 384 512 64 /e    (RAM disk in extended memory)
```

For DOS 3.3 and 4.0 with RAMDRIVE.SYS in the \DOS directory:

```
device=C:\dos\ramdrive.sys 384 512 64 /e    (RAM disk in extended mem-
                                             ory)
```

If you install a 3½ inch 720K floppy drive as drive B: and with a 360K controller card in an XT compatible, use the following command in the CONFIG.SYS file:

For DOS 3.1, 3.2, and 3.3:

```
drivparm=/d:1/f:2
```

Other CONFIG.SYS files

If your system has a minimum of 640K RAM, increasing buffers and files will probably increase performance. Entering the following CONFIG.SYS file will replace the old CONFIG.SYS file. This example is a basic CONFIG.SYS file:

```
C:\>copy con config.sys   <enter>
buffers=30 <enter>   (uses more memory than buffers=20)
files=30 <enter>   (uses more memory than files=20)
break on   <enter>
^Z <enter>   (push the F6 function key for the ^Z to end the file)

        1 file(s) copied

C:\>
```

Make the CONFIG.SYS file below if your system has one megabyte of RAM and you want to use the extra 384K of RAM as a RAM disk:

```
C:\>copy con config.sys <enter>
device=c:\dos\vdisk.sys 384 512 64 /e <enter>
buffers=30 <enter>
files=30 <enter>
break on <enter>
^Z <enter>   (push the F6 function key for the ^Z to end the file)

        1 file(s) copied
C:\>
```

CHAPTER 27

How to load software

SOFTWARE can be loaded onto the hard drive in many different ways. The programmers that develop software programs are responsible for the methods used to load it. The big problem is that there is no one standard.

What you should already know

- A directory is an area of a disk which separates related files from unrelated files (p. 87).
- The CONFIG.SYS file loads information and device drivers into memory when booting the system (p. 155).
- The AUTOEXEC.BAT file executes commands automatically when booting the system (p. 151).
- The CONFIG.SYS and AUTOEXEC.BAT files must be in the \ROOT directory.

Software with instructions

You can now make directories and copy files. You should have no problem loading software which comes with good documentation. Just follow the instruction manual provided with the software.

If you don't have instructions

First of all, *be careful* !

Some cheap software programs will overwrite your existing AUTOEXEC-.BAT or CONFIG.SYS FILES locted in the \ROOT directory. This can change the operation of your system. Popular professional programs will usually ask you if you want to modify the AUTOEXEC.BAT or CONFIG.SYS files, and that's okay.

Software installation files

If you don't have the installation manual, look at the files on the disk(s) of software you want to load, and locate a file which seems to be an install or setup file. It might look like one of the following:

SETUP.EXE
INSTALL.EXE
INSTALL.BAT
INSTALHD.BAT
HINSTALL.BAT
GO.BAT
START.BAT

The file with the .BAT extension is a BATCH file and runs when you type the letters on the left side of the period. Like the AUTOEXEC.BAT file, it is generally a list of commands that modify system parameters and then execute a main program file. It is a good idea to TYPE out the BATCH file first to see what it does. The following file is only an example of an installation file on a diskette in drive A:.

```
A:\>type install.bat <enter>

ECHO   ******************************************
ECHO   EXAMPLE SOFTWARE INSTALLATION PROGRAM
ECHO   ******************************************
MD C:\BOOK
MD C:\LEARN
COPY A:\BOOK C:\BOOK
COPYA:\LEARN C:\LEARN

A:\>
```

Looking at the contents of the INSTALL.BAT file, you'll see that running this file will make two directories on hard drive C:, \BOOK and \LEARN. It will then copy the entire directories of \BOOK and \LEARN from drive A: to \BOOK and \LEARN on drive C:.

What if the following line was in the INSTALL.BAT file?

```
COPY A:\C:\
```

This command statement will copy all the files in the \ROOT directory of drive A: to the \ROOT directory of drive C:. You must now ask yourself the question, do I

want to copy software files into the \ROOT directory of drive C:, and if you do, will any existing files be replaced? I would not run the INSTALL.BAT file if it contained this command statement because you should only have the necessary COMMAND.COM, CONFIG.SYS, AUTOEXEC.BAT, and system files in the \ROOT directory of drive C: along with software programs in their separate directories.

Compiled install programs

Using the TYPE command will not give you a readable listing of a file with the extension .EXE or .COM because these files have been compiled, a process that converts them to machine language. For this reason, you cannot know what these files will do until you run them. So far, I have evaluated most of the popular software programs with .EXE and .COM installation files and have found them safe to run. To run an install program with the .EXE or .COM extension, just type the letters on the left side of the period.

Sometimes you need to add a drive letter to the file name in the command statement. If this is necessary, a message will be displayed on the monitor screen explaining what parameters are required to perform the installation. If you are asked if it is okay to modify the AUTOEXEC.BAT or CONFIG.SYS files by the install program, you should answer yes. You can then make new files if you need to.

An installation example

Someone just gave you the original Lotus 1-2-3 program on floppy disks, but forgot to give you the manual. The first thing you do is go to drive A: and use the DIR command to find an installation file on the diskette marked installation. You will find a file with the name INSTALL.EXE. Start the install program:

```
A:\>install <enter>
```

You will see displayed a set of options. Pick FIRST TIME INSTALLATION, and simply follow the on screen instructions.

Another installation example

To install Lotus 1-2-3, you can also make a directory on your hard drive, copy all the program files into the directory, and then run the install program from your hard drive. The following example shows how to use this procedure. First, make a directory \123:

```
C:\>md\123 <enter>
C:\>
```

Now copy the files from the floppy disks to the \123 directory:

```
C:\>copy A:\*.* c:\123 <enter>
C:\>
```

When all the files are copied from the first diskette, insert the next diskette, and hit the F3 function key. This will repeat the last command, which in this case is COPY A:*.* C:\123. Repeat this process until all the files from all the disks have been copied into the \123 directory. Now change to the \123 directory so it is the current directory:

C:\>**cd \123** <enter>

C:\123>

The INSTALL.EXE program in Lotus 1-2-3 performs two operations. It will install and configure the software. Not all install programs operate this way. To install some software programs, you must copy its files into a directory and then run a configuration program.

Because you already have Lotus 1-2-3 program files in the \123 directory, you can run the install program to configure the software. Start the install program:

C:\123>install <enter>

The options menu will be displayed and rather than pick FIRST TIME INSTALLATION, you will select CHANGE EQUIPMENT. You will then be prompted to enter the type of monitor and printer(s) you will be using with Lotus 1-2-3. Don't worry about making a mistake. You can always rerun the install program and change your entries.

Configuration

Most software programs need to be configured. When you configure a software program, you are asked what type of monitor and printer is connected to your computer system. The configuration program creates a CONFIG.DAT file (*data file*) using the information you enter in response to its questions. This information is then used to select the proper drivers for your monitor and printer.

A couple of configuration programs are NMCONFIG.EXE in Newsmaster and PBSETUP.EXE in Microsoft Paintbrush. Examples of install and configuration programs combined into one program are INSTALL.EXE in Lotus 1-2-3, SETUP.EXE in Microsoft Windows, and VPPREP.EXE in Ventura Publisher.

Some software packages only allow configuring during installation to the hard drive, such as Microsoft Windows and Ventura Publisher. If you decide to use another printer or change monitor types, you must start the installation process of these software programs from drive A: using the original diskettes.

Some software packages can only be configured during program execution such as WordPerfect 5.0 and Autocad. To install WordPerfect 5.0, you would make a directory called \WP and copy all the files from the floppy diskettes into the \WP directory. Change to the \WP directory and type WP to start the WP.EXE file executing. Hold the Shift key down and hit the F1 function key, and you will enter the configuration menu. To install Autocad, make a directory called \AUTOCAD and copy all the Autocad files into it. Change to the \AUTOCAD directory and

type ACAD to start the ACAD.EXE file executing. Choose configure Autocad from the menu and follow the prompts to select your equipment.

Loaded software program does not run

If you load a software program and it doesn't run correctly, or if the hard drive runs momentarily and then the screen goes blank, you more than likely need to run its configuration program. The reason the screen goes blank is that your monitor will not display anything when the software is using the wrong video driver.

What's next?

You have completed this book. The only thing you need to do now is practice. Make some directories. Copy files and directories of files to different drives. Delete files. Remove directories. Backup your hard drive. And most of all, thank you for selecting this book and have fun.

Appendix

Other DOS commands

THIS BOOK DEFINES the most commonly used DOS commands. There are many other DOS commands available from DOS versions 3.21 to 4.01 which I do not describe in detail, but they are listed below with a brief description of what they do.

Command	Description
ANSI.SYS	Load with CONFIG.SYS for extended keyboard and monitor control using Esc sequences.
APPEND	Like the PATH command, but searches for non-executable files in specified drives and directories.
ASSIGN	Used to give a drive a different drive letter.
ATTRIBUTE	Use to change read-only and archive file attributes.
CHCP	Selects DOS code pages.
CHKDSK	Checks specified disk for errors.
CLS	Clears the monitor screen.
COMMAND	Invokes a new command processor.

COMP	Compares files or groups of files.
COUNTRY	Selects the time, date, and currency formats for a foreign country. Use in CONFIG.SYS file.
CTTY	Use for changing the way the system directs I/O.
DEBUG	A binary editing program.
DISKCOMP	Use to compare two floppy diskettes.
DEVICE	Use in CONFIG.SYS to load a device driver.
DISPLAY.SYS	Code page switching for the video display.
DRIVER.SYS	Use in CONFIG.SYS to load drivers that bridge DOS with external devices.
DRIVPARM	Use in CONFIG.SYS to change default device driver configuration.
EDLIN	A line editor used for creating and editing ASCII files.
ERASE	Use to remove (delete) files.
EXE2BIN	Changes a file with .EXE extension to binary format.
EXIT	Returns control to a previous command processor.
FASTOPEN	Decreases time necessary to reopen and close files.
FC	Compares files and displays actual differences.
FCBS	Use in CONFIG.SYS file to select the number of file control blocks open at one time.
FIND	Searches through a file for a specified string of text.
GRAFTABL	Enables display of extended character sets in graphics mode.
GRAPHICS	Loads a driver to enable graphic screen dumps.
GWBASIC	Basic programming language.
HIMEM.SYS	Moves memory-resident programs to extended memory.
INSTALL	Use in CONFIG.SYS to execute FASTOPEN, KEYB, NLSFUNC, or SHARE.
JOIN	Joins a disk drive with a directory.
KEYB	Loads foreign language keyboard characters.
LABEL	Add, change, or delete a disk volume label.
LASTDRIVE	Use in CONFIG.SYS file to specify the last drive letter that the computer will recognize.
LINK	Creates executable program files from object files.
PRINTER.SYS	Code page switching for printing foreign fonts.
PRINT	Use to send a file to a printer.
REN	Short for rename, use to change a file name.
MEM	Displays current memory status.
NLSFUNC	Use for loading country specific information.

MODE	Use to configure serial and printer ports, display mode, keyboard mode, set code pages, and redirect printing.
RECOVER	Use to recover an unreadable file or disk.
RAMDRIVE.SYS	Load with CONFIG.SYS file to create a virtual disk.
REM	Use in CONFIG.SYS to add remarks.
REPLACE	Will replace files or add files to a disk.
SELECT	Install DOS using country specific information.
SET	Use to set and look at the command processor's environment.
SHARE	Enables files to be shared in network environment.
SHELL	Enables the use of another command processor.
SMARTDRV.SYS	A disk caching program loaded from CONFIG.SYS.
SORT	Filters wanted files from a group of mixed files.
STACKS	Use in CONFIG.SYS to change number of stacks.
SUBST	Substitute a drive letter for a PATH.
SYS	Use to transfer the DOS system to a disk or diskette.
VDISK.SYS	Load with CONFIG.SYS file to create a virtual disk.
VER	Shows the booted DOS version.
VERIFY	Checks data written to a disk for integrity.
VOL	Shows the volume label of a disk or diskette.
XCOPY	Copies files in large groups instead of one file at a time and will place them in their proper directories when the /s switch is used.

Index

* wildcard, 45, 109
\ backslash, 46, 91, 93, 97, 105
/ command switch, 46, 91, 136, 142

A

ALT key, 15
ANSI.SYS, 165
APPEND, 165
archive files, 137
  change attributes of (ATTRIBUTE), 165
arithmetic logic unit (ALU), 47
arrow keys, 16
ASCII files, 43, 71, 72, 78, 109
  create and edit (EDLIN), 166
  creation of (COPY CON), 73-76, 78
  list command statements in (TYPE), 77-83
ASSIGN, 165
AT compatible, 48
ATTRIBUTE, 165
Autocad, 162
AUTOEXEC.BAT, 22-23, 69, 72, 73, 77, 149-153, 159
  accidental overwrite of, 160
  making, 150-152
  operation of, 151-152
  WordPerfect run from, 153

B

BACKUP (see also RESTORE), 21, 44, 135-139
  adding files to disk (A switch), 138
  cautionary statement, 137
  updating, 137-139
backup files, 44, 135-139
BAK files, 44, 135-139
BAS files, 44
base memory, 6
BASIC, 37, 44
BAT files, 44, 150
batch files, 44, 150, 160
baud rates, 29, 33
BIN files, 44
binary files, 44
  EXE to (EXE2BIN), 166
BIOS, 5, 35, 37, 46
boldface, 22, 51, 59, 63, 67, 72, 83, 91, 97, 105, 109, 117, 123, 129, 135
booting, 22, 35, 42, 51
  bootable diskette, formatting for, 126-127
  date (DATE), 22
  SETUP for, 5-7
  time (TIME), 22
  warm boot (CTRL-ALT-DEL), 15, 42
break on, 157
  Ctrl-C, 49
buffers20, 157
bus mouse, 18, 22
bytes, 27, 48

C

CD, 97-105, 110, 111, 114, 136, 162
central processing unit (CPU), 36, 47
Centronics interface, 32
characters, data flow of, 36
CHCP, 165
CHKDSK, 165
clock and calendar, 21-23, 26
  separate cards for, 23
  XT compatible computers, 22-23
CLS, 165
CMOS chip, 48
code pages
  foreign fonts (PRINTER.SYS), 166
  select (CHCP), 165
  set (MODE), 167
  switching (DISPLAY.SYS), 166
cold boot (see booting)
COM files, 44, 72, 150
  installation, 161
COM ports, 25, 31, 33
COMMAND, 165
command line, 43
command processor
  enable other (SHELL), 167
  invoke (COMMAND), 165
  return to (EXIT), 166
  set and view environment for (SET), 167
command statement, 43, 72
  list (TYPE), 77-83
COMMAND.COM, 46, 126
commands, 67, 72
  command line, 43
  command statement, 43, 72
  entering, 43
  entry of, 67, 72, 78, 83, 91, 97, 105
  switches (/), 46, 65-66, 91, 136, 142
communications program (PROCOMM), 77
COMP, 166

compilation, 44, 72
computers, 3-7
  BIOS chips, 5
  boot-up process, 35
  booting up, running SETUP for, 5-7
  compatibility in, 36-37, 48
  driver card, 5
  floppy drive, 4
  hard disk, 4
  interleave factor, 5
  memory chips, 5
  power supply for, 4
  slots, 5
  speed of, 7
CONFIG.DAT, 162
CONFIG.SYS, 73, 77, 155-159
  accidental overwrite of, 160
  adding files to, 157-158
  commands in, meaning of, 157
  execute commands, INSTALL for, 166
  making, 156-157
  operation of, 155
configuration, software, 162
connectors, male and female, 25
Control-C, 49
Control-Z, 48, 72
coprocessor, math, 36, 47
COPY, 91, 102, 109-115
COPY CON, 71-76, 78, 83, 109, 150, 155
COUNTRY, 166
country specific information (NLSFUNC), 166
  install DOS using (SELECT), 167
crash, 135
CTRL key, 15
CTTY, 166
currency, foreign country format (COUNTRY), 166
current directory, 43
cursor, 15, 18, 22, 45, 51, 59, 63

D

daisy wheel printers, 33
DAT files, 44
data, check integrity of (VERIFY), 167
data bits, 33
data files, 44, 71, 72, 78, 109
data flow, 36
data processing, 36
data transfer, parallel vs. serial, 27, 31
database files, 44
DATE, 6, 21
  entry at boot-up, 22
  foreign country format (COUNTRY), 166
DBF files, 44
DEBUG, 166
debugging (DEBUG), 166
defaults, 45, 60
DEL key, 15
DELETE, 83-85, 103, 111, 113
DEVICE, 157, 166
device drivers
  change default configuration (DRIVPARM), 166
  external devices, load (DRIVER.SYS), 166
  load (DEVICE), 166
digitizer tables, serial port use with, 28
DIR (see also directories), 36, 56-57, 63-66, 74, 75, 85, 93, 99-103, 105, 106, 108, 110, 111, 113, 114, 155
directories (see also DIR), 45, 67, 87-95, 97, 117, 155, 159
  accidental deletion (RESTORE) for, 143-145
  at prompt (PROMPT), 67
  backslash indicator, 46, 91, 93, 97, 105
  changing (CD), 97-104
  copying files to (COPY), 103
  current, 43, 60, 63, 68, 150, 156
  directory map, 89
  join disk drive to (JOIN), 166
  make (MD), 57-58, 91-95, 99, 106
  removing (RD), 105-108
  root (see root directories)
  scrolling, 65
  sub- (see subdirectories)
  viewing (DIR), 56-57, 63-66
  wide view, 66
directory map, 89
disk caching program, SMARTDRV.SYS, 167
disk drives (see also floppy drive; hard disk), 3, 9-13, 59-61
  changing, 59-61
  designation of, 51, 59, 63, 129
  floppy (see floppy drive)
  one only, using DISKCOPY with, 131-133
  transfer DOS to (SYS), 167
  two different, using DISKCOPY with, 133
  volume label, show (VOL), 167
DISKCOMP, 166
DISKCOPY, 120, 128, 129-133
  one disk drive only, 131-133
  two different size drives, 133
diskettes, 9-13, 15, 42
  3.5 vs. 5.25 inch, 12
  add files to (REPLACE), 167
  bad sectors on, 127-128
  check for errors (CHKDSK), 165
  compare (DISKCOMP), 166
  copying (DISKCOPY), 129-133
  copying files between (COPY), 114-115
  copy files from hard disk to (BACKUP), 141
  copy files to hard disk from (RESTORE), 141-145
  double density, 129
  formatting (FORMAT.COM), 42, 52, 60, 117, 118, 123-128, 136
  high-density, 12, 130
  insertion of, 12, 123
  recover erased (RECOVER), 167
  sectors and tracks, 127-128
  single- vs. double-sided, 12
  system, DOS, 42
  transfer DOS to (SYS), 167
  volume label, show (VOL), 167
  volume labels (LABEL), 166
DISPLAY.SYS, 166
DOC files, 44
document files, 44
DOS, 117
  loading, 35, 51-58
  making bootable diskette for, 126-127
  operation of, 36, 41-42

supplemental programs, 57-58
system diskette for, 42, 52
version of, show (VER), 167
dot matrix printers, 33
driver card, 5
DRIVER.SYS, 166
DRIVPARM, 157, 166

E

EDLIN, 166
EGA monitors, 27
Enter key, 22, 43, 67, 72, 78, 83, 91, 97, 105
ERASE, 166
escape sequences (ANSI.SYS), 165
EXE files, 44, 72, 150
change to binary (EXE2BIN), 166
installation, 161
object files to (LINK), 166
EXE2BIN, 166
executable files (EXE or COM), 44, 72, 150
paths for (PATH), 117-121
EXIT, 166
expanded memory, 47
expansion cards, 5, 26
extended memory, 7, 47, 157
move memory-resident programs to (HIMEM.SYS), 166
extensions, file, 44, 72, 83
external devices
load driver for (DRIVER.SYS), 166
port connection of, 26

F

FASTOPEN, 166
FC, 166
FCBS, 166
female D connector, 25
file allocation table (FAT), 36, 71
files, 44, 67, 71
accidental deletion (RESTORE) for, 143-145
add (REPLACE), 167
archive, change attributes (ATTRIBUTE), 165
archived, 137
ASCII (see ASCII files)
backup (BACKUP), 133
batch (see batch files)
binary, 44
compare, 166
compare and display difference (FC), 166
control blocks, select number of (FCBS), 166
copy (COPY), 103
copy all (DISKCOPY), 120, 129-133
copy from diskettes to hard disk (RESTORE),141-145
copy from hard disk to diskette (BACKUP), 141
copy group of (XCOPY), 167
copying, 45
copying (COPY), 45, 91, 109-115
copying from diskette to diskette (COPY), 114-115
creation of (COPY CON), 36, 71-76
data, 44, 71, 72, 78, 109
database, 44
date and time stamp for (DATE and TIME), 21
delete (ERASE), 166
deleting (DELETE), 83-85, 103
directories for (see directories)
document, 44
duplicate names, PATH to find, 119
end of file marker (Ctrl-Z), 48
EXE from object (LINK), 166
EXE, change to binary format (EXE2BIN), 166
executable (EXE or COM), 72, 150
extensions for, 44, 72, 83
find specified string of text (FIND), 166
hard disk placement of, 88
hidden, 46
listing (DIR), 36, 64-65
Lotus, 44
naming, 36, 44, 72, 83, 109, 141, 150
non-executable, search for (APPEND), 165
paths, 45
printing (PRINT), 166
printing (TYPE) command for, 79
program (see programs)
read-only, change attributes of (ATTRIBUTE), 165
recover erased (RECOVER), 167
renaming (REN), 166
reopen and close (FASTOPEN), 166
replace (REPLACE), 167
scrolling list of, 65
sharing (SHARE), 167
sort specified (SORT), 167
system, 44, 46
temporary, 44, 84
text, 44
view text of (TYPE), 77-82, 83
wide list of, 66
wildcard deleting, 113
wildcards in, 109
FIND, 166
fixed disk (see hard disk)
floppy (see diskette)
floppy drive, 4, 11, 35, 51, 59, 63, 123-124
fonts, code page switching for (PRINTER.SYS), 166
foreign language characters (KEYB), 166
FORMAT, 42, 117, 118, 123-128, 136
FORMAT.COM, 42
formatting, 42, 52, 117, 118
bad sectors, 127-128
bootable diskette, 126-127
cautionary statement, 52, 56, 124
directory creation at, 87
diskettes, 60, 123-128, 136
hard disk drive, 52-56, 52
free space, hard disk, 88
FSDISK.COM, 53-56
full height hard disk, 10
function keys, 16, 72

G

GO.BAT, 160
GRAFTABL, 166
graphics, 166
extended character set display (GRAFTABL), 166
screen dumps (GRAPHICS), 166

GWBASIC, 37, 166

H

half height hard disk, 10
hard disk, 4, 10, 35, 42, 51, 59
  backing up (BACKUP), 135-138
  change letter designation of (ASSIGN), 165
  copy files from diskette to (RESTORE), 141-145
  copy files to diskette from (BACKUP), 141
  designation of, 6
  directory structure map of, 89
  files on, 88
  formatting, 52-56, 52
  free space on, 88
  full and half height, 10
  join directory to (JOIN), 166
  partitioning, 53-55, 53
  requirements of, 3
  specify last recognized (LASTDRIVE), 166
  volume labels (LABEL), 166
HDIR.COM, 155
head crash, 135
  RESTORE after, 142
hidden files, 46
HIMEM.SYS, 166
HINSTALL.BAT, 160

I

IBM-DOS, 42, 155
IBMBIOS.COM, 46
IBMDOS.COM, 46
input-output, change system direction of (CTTY), 166
INSTALHD.BAT, 160
INSTALL, 166
INSTALL.BAT, 160
INSTALL.EXE, 160, 162
installation files
  compiled, 161
  software, 160
interleave factors, 5

J

JOIN, 166
jumpers, 48

K

KEYB, 166
keyboards, 15-18, 35
  101-key, 16-17, 22
  84-key, 15-16, 22
  characters set in (KEYB), 166
  electrical compatibility, 17
  plug-in for, 26
  plug-in for, 16-17, 16
  quality of, 17-18, 17
  set mode for (MODE), 167
  XT vs. AT computers, setting for, 17
kilobytes, 48

L

LABEL, 166
languages, computer, 44, 72
laser printer, 34
  parallel port use with, 28
LASTDRIVE, 166
letter quality printers, 33
LINK, 166
Lotus 1-2-3, 44, 161, 162
LPT1-2-3, 27, 29

M

male D connector, 25
math coprocessors, 36, 47
MD, 47-58, 91-95, 97, 99, 105, 106, 110
megabytes, 48
MEM, 166
memory, 5, 9, 42, 47, 156
  base, 6
  byte size of, 48
  current status of (MEM), 166
  expanded, 47
  extended (see extended memory)
  RAM (see RAM)
  requirements of, 3
  ROM, 46
  saving files to, 36
  wait states, 46
memory-resident programs, move to extended memory (HIMEM-.SYS), 166
microprocessor, 36, 47
MODE, 33, 167
monitors, 27
MORE filter, 79-82
mouse, 18-19
  serial vs. bus, 18, 22
MS-DOS, 42, 155
multi I-O card, 23

N

networks
  access time for (DATE and TIME), 21
  serial port use with, 28
  sharing files (SHARE), 167
NLSFUNC, 166
NMCONFIG.EXE, 162
Num Lock key, 16
numeric keypad, 16

O

object files, EXE files from (LINK), 166
operating systems, DOS and others, 41-42

P

parallel ports, 25-29
parameters, 45
parity, 33
partitioning hard disk, 53-55
PAS files, 44
Pascal, 44
PATH, 45, 72, 117-121, 124, 130, 131, 136, 141, 149, 150, 156
  problems with, 119-120
  substitute drive letter for (SUBST), 167
PBSETUP.EXE, 162
PC DOS, 42
plotters, 28
ports, 25-29
  data transfer, 27
  identification of, 26
  location of, 26
  monitors and, 27
  parallel port identification, 29
  parallel port uses, 27-28, 27
  pros and cons, 29
  serial port uses, 28
  video adapter, 27
power supply, 4
PRINT, 166
PRINTER.SYS, 166
printers, 31-34
  baud rate, 29
  cable to computer connection, parallel, 32
  cable to computer connection, serial, 33
  Centronics (parallel) interface connector, 32

mouse connection and, 18
parallel port use with, 27-28, 31-32
serial port use with, 28, 32-33
types of, 33-34
printing, 36
foreign fonts (PRINTER.SYS), 166
send file to printer (PRINT), 166
send file to printer (TYPE), 79
set mode for (MODE), 167
PROCOMM, 77
programming, language for (GWBASIC), 166
programs, 44, 72, 78, 109, 117
BASIC, 44
compiling, 44, 72
editing (DEBUG), 166
executable (EXE or COM), 44
Pascal, 44
remarks in (REM), 167
writing, 44
PROMPT and prompts, 45, 51, 60, 63, 64, 66, 69, 72, 97, 109, 124, 130, 131, 149, 150, 156
PrtSc key, 16

R

RAM, 3, 5, 9, 35, 42, 47, 156
RAMDRIVE.SYS, 167
RD, 105-108, 110
read only memory (ROM), 46
read-only files, change attributes of (ATTRIBUTE), 165
READ.ME files, 77
RECOVER, 167
REM, 167
remarks (REM), 167
REN, 166
REPLACE, 167
RESTORE (see also BACKUP), 21, 135, 136, 137, 139, 141-145
Return key, 22, 43
RGB monitors, 27
ROM, 46
root directories, 43, 64, 67, 72, 75, 87-91, 117, 159
RS-232 interface (serial), 29, 31

S

screen
clear (CLS), 165
code page switching (DISPLAY.SYS), 166
print from (screen dump), 16
screen dump, 16, 166
screen dumps (GRAPHICS), 166
scrolling, 65
SELECT, 167
serial devices, serial cable for, 28
serial mouse, 18, 22
serial ports, 25-29
set mode for (MODE), 167
SET, 167
SETUP, 9
running, 5-7
SETUP.EXE, 160, 162
SHARE, 167
SHELL, 167
slots, 5, 9, 15, 26
mouse connection and, 18
SMARTDRV.SYS, 167
software
compatibility in, 36-37
compiled install programs, 161
configuration of, 162
installation files, 160
instructions with, 159
loading, 159-163
no instructions, caution with, 160
overwriting AUTOEXEC.BAT or CONFIG.SYS by mistake, 160
problems with, 163
sorting, files (SORT), 167
speed, 7
stacks, change number of (STACKS), 167
START.BAT, 160
stop bits, 27, 29, 33
strings, find specific (FIND), 166
subdirectories, 45, 105
make (MD), 107
remove (RD), 107
SUBST, 167
Supplemental Programs Disk, 57-58
switches, 46, 65, 66, 91, 136, 142
SYS files, 44, 167
system files, 42, 44, 46, 52
making bootable diskette for, 126-127

T

temporary files, 44, 84
text files, 44
creation of (COPY CON), 78
creation of, 73-76
TIME, 6, 21
entry at boot-up, 22
foreign country format (COUNTRY), 166
TIMER.COM, 23
TMP files, 44
TTL monitors, 27
TXT files, 44
TYPE, 72, 77-83, 161
MORE filter for, 79-82

V

VDISK.SYS, 167
VER, 167
VERIFY, 167
version, show current (VER), 167
video adapter card, 6, 27
video graphics array (VGA), 27
virtual disk
create (VDISK.SYS), 167
creation of (RAMDRIVE.SYS), 167
VOL, 167
volume labels, 56
add, change, delete (LABEL), 166
show (VOL), 167
VPPREP.EXE, 162

W

wait states, 46
warm boot (CTRL-ALT-DEL), 42
wide directories, 66
wildcards, 45, 109, 142
copying all files between disks, 115
deleting with, 113
WK1 files, 44
WordPerfect, 162
AUTOEXEC.BAT file for, 153

X

XCOPY, 167
XT compatible, 48

VERMONT DEPT. OF LIBRARIES
0 00 01 0159346 5
ABC-8625

005.4 NERL
Cadway, Richard P.
Learn DOS--guaranteed!

005.4 NERL
Cadway, Richard P.
Learn DOS--guaranteed!

MAY 0 1 1992
MAY 0 5 1992
35
4227
JUN 1 7 1994
JUL 2 9 1990
JUN. 1 7 1994
JUL 8 1994
MAY 0 1 1992
SEP 1 1 2008
MAY 0 5 1992
MAY 0 5 1992

Learn DOS—Guaranteed! is the perfect learning tool for those of you who are new to DOS and looking for an easy-to-read, bare-bones guide to system operation—one that concentrates exclusively on basic hardware installation and the commands you need to get started.

With clarity and humor, Richard Cadway describes how to

- Hook up and use system components
- Format your hard drive and load DOS
- Identify installation and executable programs
- Make, change, and remove directories
- Create, copy, and delete files
- Back up files on your hard drive
- Perform basic operations with AUTOEXEC.BAT and CONFIG.SYS

There's nothing fancy here—you learn only what you need to get your system up and running effectively. Cadway provides you with a solid foundation upon which you can build your career with computers—while saving you the weeks or months of confusion you'll endure with other DOS books.

Contents

Part 1: Hardware

The Basic Computer System: Computer System Requirements, Running SETUP—Disk Drives and Diskettes—The Keyboard and Mouse—The Clock and Calendar—Parallel and Serial Ports—Connecting the Printer—Basic Operation

Part 2: DOS Training

List of Terms—Load DOS—Changing Disk Drives—The DIR Command—The PROMPT Command—Make a File with COPY CON—The TYPE Command—The DELete Command—Make Directories—Change Directories—Remove Directories—COPY a File—The PATH Command—FORMAT a Diskette—DISKCOPY—How to BACKUP—How to RESTORE

Part 3: Operations

The AUTOEXEC.BAT File—The CONFIG.SYS File—How to Load Software

Your entry-level guide to using all versions of MS/PC-DOS!

Learn DOS concepts and techniques through a series of bite-size tutorials—complete with working examples and review exercises!

About the Author

Richard Cadway is an independent computer consultant and trainer who specifies, assembles, and sells microcomputer systems to individuals and businesses. He also specializes in end-user training in system operations.

IBM DOS

Beginner	Intermediate	Advanced

0590 $14.95

ISBN 0-8306-3331-6

9 780830 633319 90000

WINDCREST®

Blue Ridge Summit, PA 17294-0850